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Version 3.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This device is in conformity with the following EC/EMC directives:

- ❑ **EN 55022** Limits and methods of mesurement of radio disturbance characteristics of information technology equipment
- ❑ **EN 61000-3-2** Disturbances in supply systems caused
- ❑ **EN 61000-3-3** Disturbances in supply systems caused by household appliances and similar electrical equipment " Voltage fluctuations"
- ❑ **EN 55024** Information technology equipment-Immunity characteristics-Limits and methods of measurement
- ❑ **EN 60950** Safety for information technology equipment including electrical business equipment
- ❑ **CE marking** CE

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 Introducing the Motherboard	Describes features of the motherboard.	⇨ page 1
Chapter 2 Installing the Motherboard	Describes installation of motherboard components.	⇨ page 7
Chapter 3 Using BIOS	Provides information on using the BIOS Setup Utility.	⇨ page 25
Chapter 4 Using the Motherboard Software	Describes the motherboard software.	⇨ page 53
Chapter 5 CrossFire™ Technology (AMD Dual Graphics) Support	Describes the ATI Crossfire™ Technology	⇨ page 57
Chapter 6 Setting Up AMD A55 RAID Configuration	Provides information about SATA RAID Setup	⇨ page 61
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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the **A55F-M4** motherboard. This motherboard is a high performance, enhanced function motherboard that supports socket FM1 for AMD A series processor for high-end business or personal desktop markets.

The motherboard is based on AMD A55 (Hudson D2) express chipset for best desktop platform. A55 is a single-chip, highly integrated, high performance Hyper-Transport peripheral controller, unmatched by any other single chip-device controller. The memory controller supports DDR3 memory DIMM frequencies of 1866*1/1600/1333. It supports two DDR3 slots with maximum memory size of 16 GB. One PCI Express x16 slot, intended for Graphics Interface, is fully compliant to the PCI Express Gen2 (version 2.0). In addition, one PCI Express x1 slot and one PCI slot are supported.

It implements USB 2.0 interface, supporting up to eight USB 2.0 ports (four USB 2.0 ports and two USB 2.0 headers support additional four USB 2.0 ports). This motherboard integrates a Serial ATA host controller, supporting four SATA ports with maximum transfer rate up to 3Gb/s each.

There is an full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, one D-sub (VGA) port, one HDMI(Optional*2), four USB 2.0 ports, one LAN port, three audio jacks for microphone, line-in and 6-ch line-out.

1. Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel.

2. The HDMI port is optional, please take the actual motherboard as standard. If you have any questions, please contact the sellers.

Package Contents

Your motherboard package ships with the following items:

- ❑ A55F-M4 Motherboard
- ❑ Quick Installation Guide
- ❑ User Manual
- ❑ DVD
- ❑ I/O Shield
- ❑ 2 SATA 3Gb/s Cables

The package contents above are for reference only, please take the actual package items as standard.

Specifications

CPU	• Socket FM1 for AMD A series processors • Supports CPU up to 100W TDP *Note: Please go to ECS website for the latest CPU support list.*
Chipset	• AMD A55 Chipset
Memory	• Dual-channel DDR3 memory architecture • 2 x 240-pin DDR3 UDIMM sockets support up to 16 GB • Supports DDR3 1866*/1600/1333 MHz DDR3 SDRAM *Note: *Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel. Please go to ECS website for the latest Memory support list.*
Expansion Slots	• 1 x PCI Express x16 Gen2 slot • 1 x PCI Express x1 Gen2 slot • 1 x PCI slot
Storage	• Supported by AMD A55 (Hudson D2) - 4 x Serial ATA 3Gb/s devices
Audio	• VT1705CE 6-Ch High Definition audio CODEC - 6 Channel High Definiton Audio Codec - Compliant with HD audio specification
LAN	• Realtek RTL8111E-VL-CG Giga Lan
Rear Panel I/O	• 1 x PS/2 keyboard and PS/2 mouse connectors • 1 x D-Sub port (VGA) • 1 x HDMI port (optional) • 4 x USB 2.0 ports • 1 x RJ45 LAN connector • 1 x Audio port (Line in, Line out, Mic_in Rear)
Internal I/O Connectors & Headers	• 1 x 24-pin ATX Power Supply connector • 1 x 4-pin 12V Power connector • 1 x 4-pin CPU_FAN connector • 1 x 3-pin SYS_FAN connector • 2 x USB 2.0 headers support additional four USB 2.0 ports • 4 x Serial SATA 3Gb/s connectors • 1 x COM header • 1 x Case open header • 1 x SPDIF out header • 1 x Front panel USB power select jumper • 1 x Rear USB/PS2 power select jumper • 1 x Front Panel audio header • 1 x Front Panel switch/LED header • 1 x Speaker header • 1 x Parallel port header(LPT) • 1 x CLR_CMOS header

System BIOS	•	AMI BIOS with 32Mb SPI Flash ROM - Supports ECS MIB III Utility - Supports Plug and Play, STR(S3)/STD(S4) - Supports Hardware Monitor - Supports ACPI 3.0 version & DMI - Audio, LAN, can be disabled in BIOS - Supports ECS GUI UEFI BIOS - Supports Graphic Over-Clocking - Supports Dual-Monitor function - F7 hot key for boot up devices option - Supports Pgup clear CMOS Hotkey (Has PS2 KB Model only)
Form Factor	•	Micro-ATX Size, 230mm x 180mm

Motherboard Components

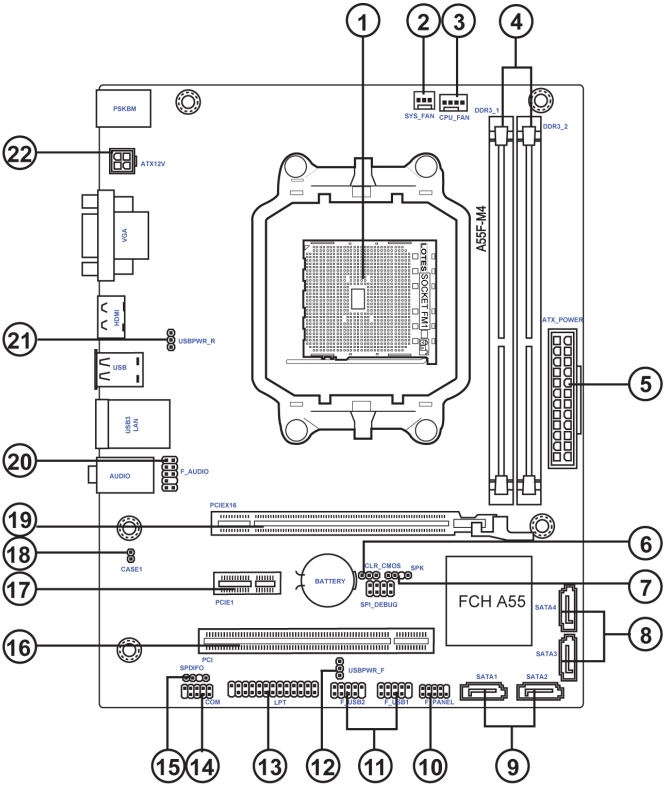
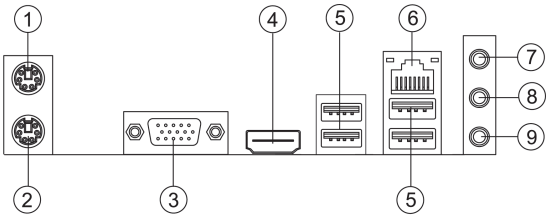


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	FM1 for AMD A series processors
2. SYS_FAN	System cooling fan connector
3. CPU_FAN	CPU cooling fan connector
4. DDR3_1~2	240-pin DDR3 SDRAM slots
5. ATX_POWER	Standard 24-pin ATX power connector
6. CLR_CMOS	Clear CMOS jumper
7. SPK	Speaker header
8. SATA3~4	Serial ATA 3.0 Gb/s connectors
9. SATA1~2	Serial ATA 3.0 Gb/s connectors
10. F_PANEL	Front panel switch/LED header
11. F_USB1~2	Front panel USB 2.0 header
12. USBPWR_F	Front panel USB power select jumper
13. LPT	Onboard parallel port header
14. COM	Onboard serial port header
15. SPDIFO	SPDIF out header
16. PCI	32-bit add-on card slot
17. PCIE1	PCI Express x1 slot
18. CASE1	Case open header
19. PCIEX16	PCI Express slot for graphics interface
20. F_AUDIO	Front panel audio header
21. USBPWR_R	Rear USB/PS2 power select jumper
22. ATX12V	4-pin +12V power connector

I/O Ports



1. PS/2 Mouse(green)
Use the upper PS/2 port to connect a PS/2 mouse.

2. PS/2 Keyboard(purple)
Use the lower PS/2 port to connect a PS/2 keyboard.

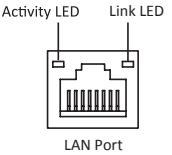
3. VGA Port
You can connect the display device to the VGA port.

4. HDMI Port (optional)
You can connect the display device to the HDMI port.

5. USB 2.0 Ports
Use the USB 2.0 ports to connect USB 2.0 devices.

6. LAN Port
Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

LAN LED	Status	Description
Activity LED	OFF	No data
	Orange blinking	Active
Link LED	OFF	No link
	Green	Link



7. Line-in(blue)
It can be connected to an external CD/DVD player, Tape player or other audio devices for audio input.

8. Line-out(lime)
It is used to connect to speakers or headphones.

9. Microphone(pink)
It is used to connect to a microphone.

Chapter 2
Installing the Motherboard

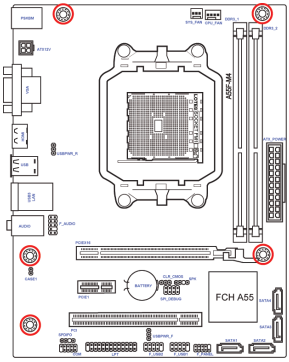
2-1. Safety Precautions

Follow these safety precautions when installing the motherboard:

- Wear a grounding strap attached to a grounded device to avoid damage from static electricity.
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard.
- Leave components in the static-proof bags.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

2-2. Installing the motherboard in a Chassis

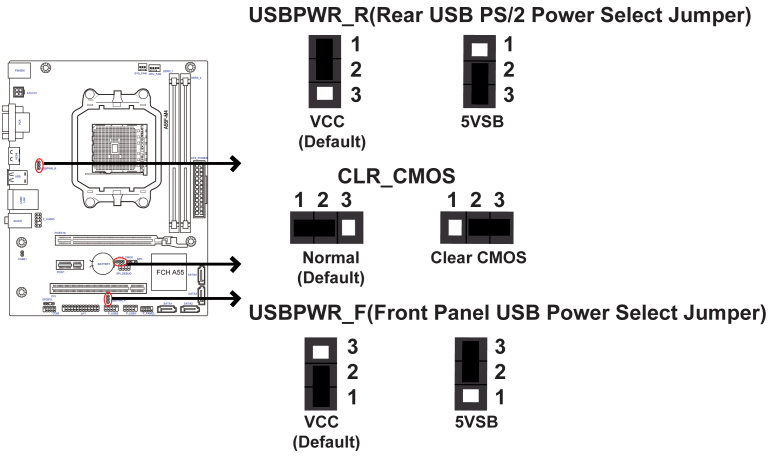
This motherboard carries a Micro ATX form factor of 230 x 180 mm. Choose a chassis that accommodates this from factor. Make sure that the I/O template in the chassis matches the I/O ports installed on the rear edge of the motherboard. Most system chassis have mounting brackets installed in the chassis, which corresponds to the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.



Do not over-tighten the screws as this can stress the motherboard.

2-3. Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



1. To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save and Exit Setup".

2. Make sure the power supply provides enough 5VSB voltage before selecting the 5VSB function.

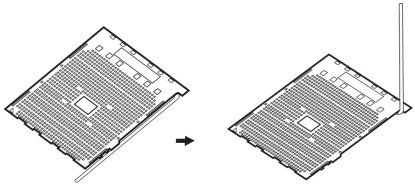
3. It is required that users place the USBPWR_F1 & USBPWR_R1 cap onto 2-3 pin rather than 1-2 pin as default if you want to wake up the computer by USB/PS2 KB/Mouse.

2-4. Installing Hardware

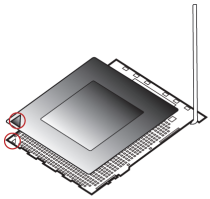
2-4-1. Installing the Processor

- This motherboard has an FM1 socket.
- When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.
- You may be able to change the settings in the system Setup Utility. We strongly recommend you do not over-clock processor or other components to run faster than their rated speed.
- The following illustration shows CPU installation components.

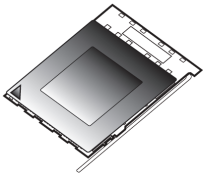
A. Pull up the lever away from the socket and lift up to 90-degree angle.



B. Locate the CPU cut edge (the corner with the pin hold noticeably missing). Align and insert the CPU correctly.



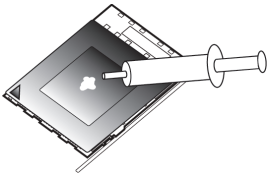
C. Press the metal lever back into its original position.



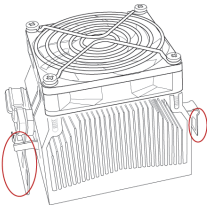
2-4-2. Installing the CPU Cooler

- Install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.
- Avoid using cooling fans with sharp edges in case the fan casing and the clips cause serious damage to the motherboard or its components.
- To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heat sink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.
- The following illustration shows how to install CPU fan.

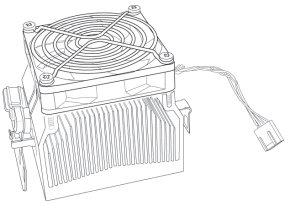
A. Apply some thermal grease onto the contacted area between the heatsink and the CPU, and make it to be a thin layer.



B. Put the CPU Fan down on the retention module and flip the levers over the heat sink in place.



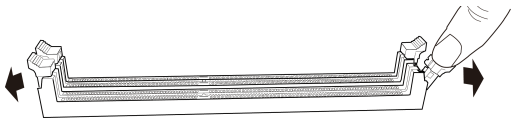
C. Connect the CPU cooler power connector to the CPU_FAN connector.



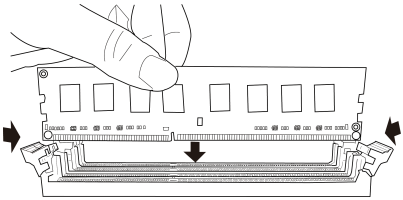
2-4-3. Installing Memory Modules

- This motherboard accommodates four memory modules. It can support two 240-pin DDR3 1866*/1600/1333.
- Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.
- You must install at least one module in any of the two slots. Total memory capacity is 16 GB.
- Refer to the following to install the memory modules.

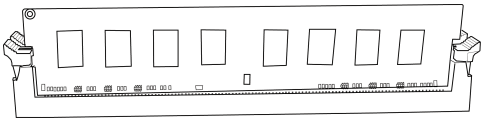
A. Push the latches on each side of the DIMM slot down.



B. Install the DIMM module into the slot and press it firmly down until it seats correctly. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.



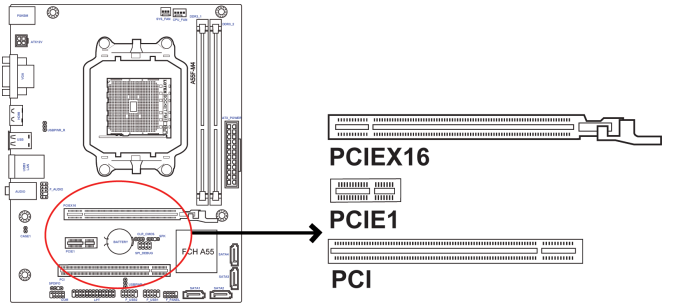
C. The slot latches are levered upwards and latch on to the edges of the DIMM.



**Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel.*

2-4-4. Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIEX16 Slot The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 2.0.

PCIE1 Slot The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 2.0.

PCI Slot This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board is PCI v2.2 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1 Remove a blanking plate from the system case corresponding to the slot you are going to use.

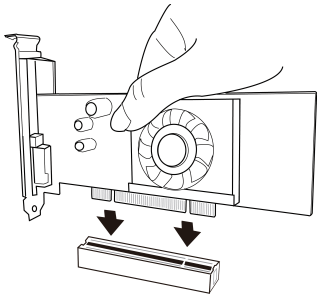
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.

3 Secure the metal bracket of the card to the system case with a screw.

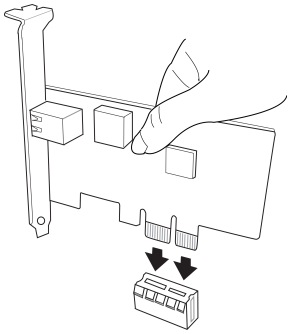
1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

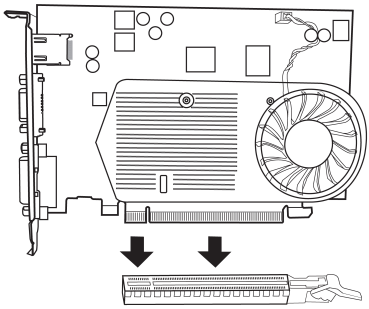
Please refer the following illustrations to install the add-on card:



Install the VGA Card in the PCI slot



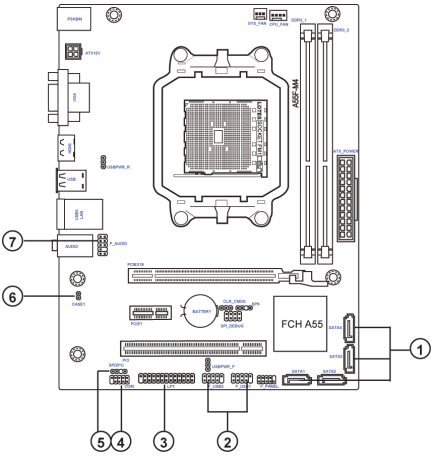
Install the LAN Card in the PCIE X1 slot



Install the VGA Card in the PCIE X16 slot

2-4-5. Connecting Optional Devices

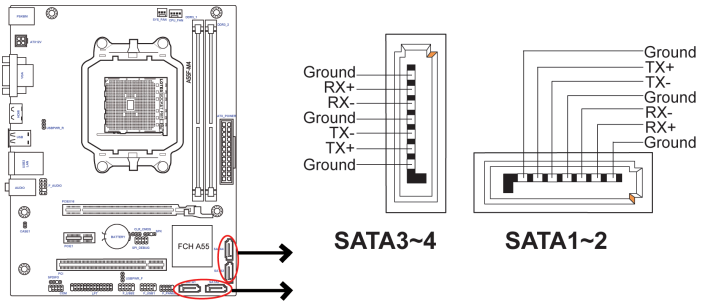
Refer to the following for information on connecting the motherboard's optional devices:



No.	Components	No.	Components
1	SATA1~4	5	SPDIFO
2	F_USB1~2	6	CASE
3	LPT	7	F_AUDIO
4	COM	——	——

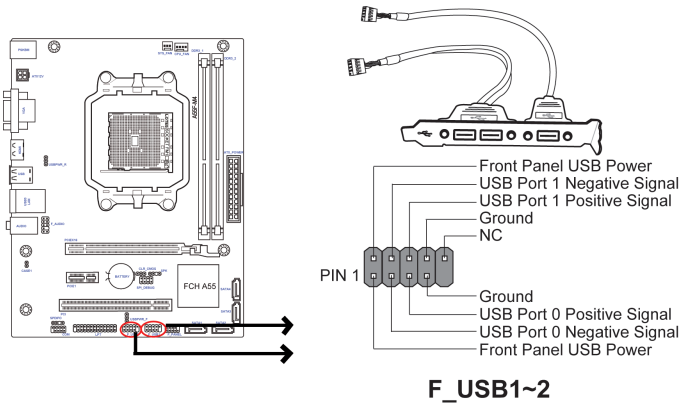
1. SATA1~4: Serial ATA connectors

SATA1~4 connectors are used to support the Serial ATA 3.0Gb/s device, simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.



2. F_USB1~2: Front Panel USB 2.0 headers

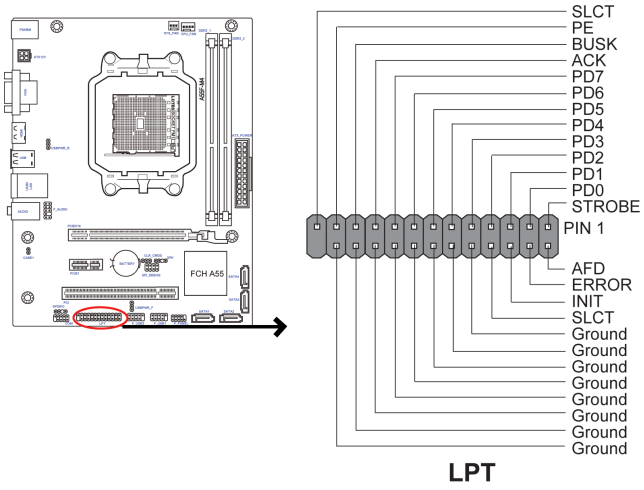
The motherboard has two USB 2.0 headers supporting four USB 2.0 ports. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

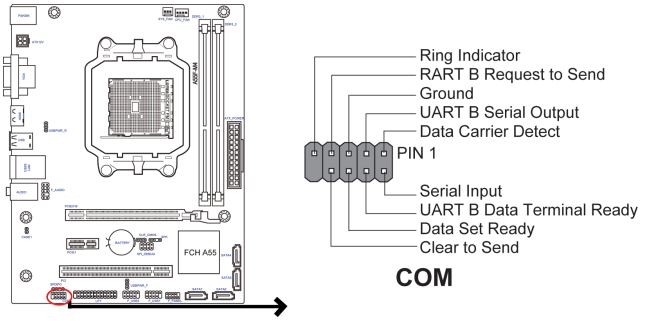
3. LPT: Onboard parallel port Header

This is a header that can be used to connect to the printer, scanner or other devices.



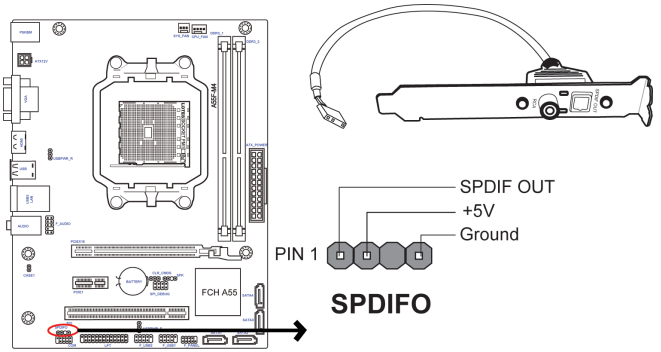
4. COM: Onboard serial port header

Connect a serial port extension bracket to this header to add a serial port to your system.



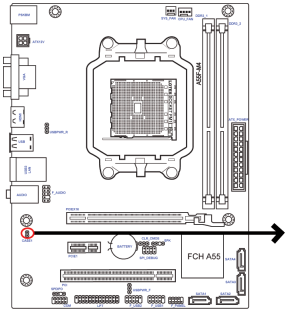
5. SPDIFO: SPDIF out header

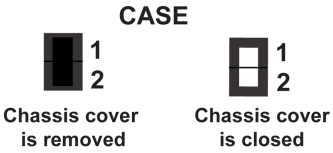
This is an optional header that provides an SPDIFO (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.



6. CASE: Chassis Intrusion Detect Header

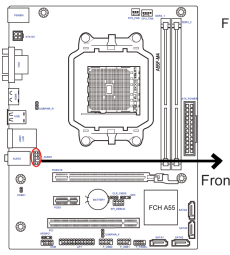
This detects if the chassis cover has been removed. This function needs a chassis equipped with instrusion detection switch and needs to be enabled in BIOS.

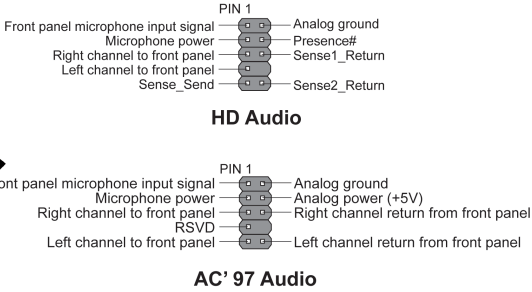




7. F_AUDIO: Front Panel Audio Header

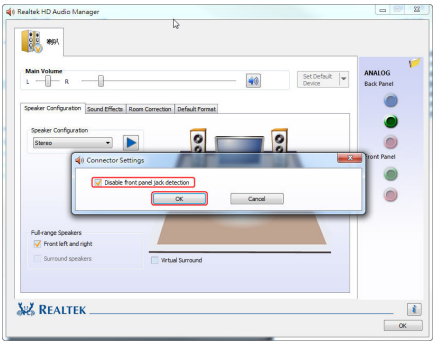
The front panel audio header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access. This header supports HD audio by default. If you want connect an AC' 97 front panel audio to HD onboard headers, please set as below picture.





AC' 97 Audio Configuration: To enable the front panel audio connector to support AC97 Audio mode.

If you use AC' 97 Front Panel, please tick off the option of "Disabled Front Panel Detect ". If you use HD Audio Front Panel, please don' t tick off "Disabled Front Panel Detect ".



** For reference only*

If you use AC' 97 Front Panel, please don' t tick off "Using Front Jack Detect ". If you use HD Audio Front Panel, please tick off the option of "Using Front Jack Detect ".

** For reference only*

2-4-6. Installing a SATA Hard Drive

This section describes how to install a SATA Hard Drive.

About SATA Connectors

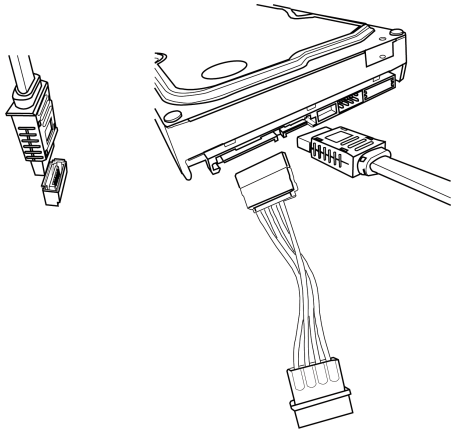
Your motherboard features four SATA connectors supporting a total of four drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with a SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

Refer to the illustration below for proper installation:

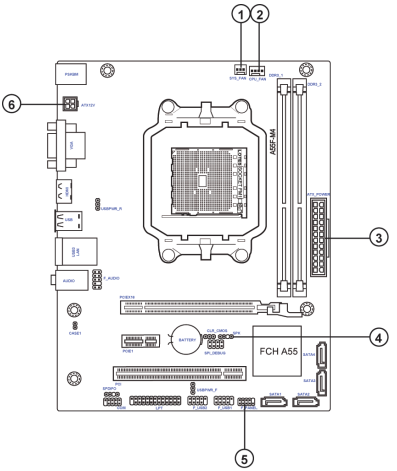
1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.



** For reference only*

2-4-7. Connecting Case Components

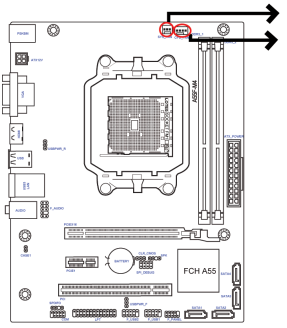
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

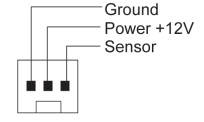


No.	Components	No.	Components
1	SYS_FAN	4	SPK
2	CPU_FAN	5	F_PANEL
3	ATX_POWER	6	ATX_12V

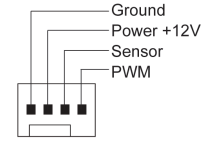
1 & 2. SYS_FAN(System Cooling FAN Power Connector) & CPU_FAN(CPU cooling FAN Power Connector)

Connect the CPU cooling fan cable to **CPU_FAN**.
Connect the system cooling fan connector to **SYS_FAN**.





SYS_FAN

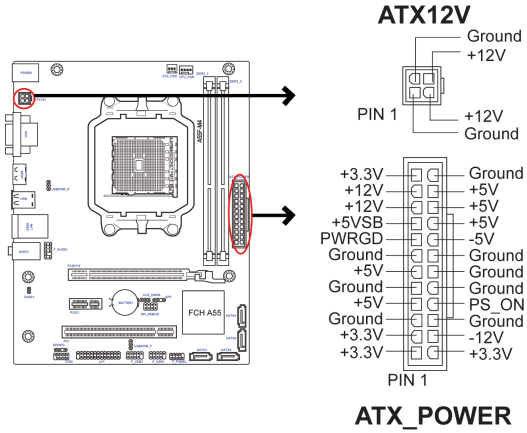


CPU_FAN

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

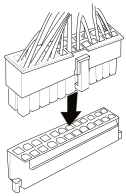
3 & 6. ATX_POWER (ATX 24-pin Power Connector) & ATX12V (ATX 12V Power Connector)

Connect the standard power supply connector to **ATX_POWER**.
Connect the auxiliary case power supply connector to **ATX12V**.



Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.

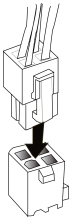


24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX match perfectly.

Connecting 4-pin power cable

The ATX12V4P power connector is used to provide power to the CPU.

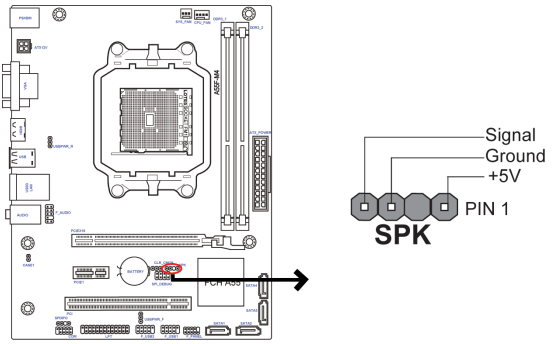


4-pin power cable

When installing 4-pin power cable, the latches of power cable and the ATX12V4P match perfectly.

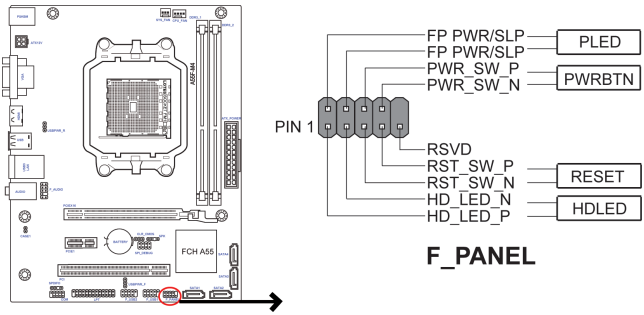
4. SPK: Speaker

Connect the case speaker cable to **SPK**.



5. Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Memo

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press the delete key to access BIOS Setup Utility.

Above image is for reference only, for details please refer to actual image.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.

American Megatrends
A55F-M4 Release 09/13/2012
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.
Press <F7> to enter BBS POPUP
Press <DEL> or <F2> to enter setup.
CMOS Setting Wrong

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with an icon ▷) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by an icon. >

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-	Change Opt.
Enter	Select
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit

1. For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

2. In this Gui BIOS, you can operate by mouse or keyboard. Click : select item; Double click: enter; Right click: exit.

Language

Select the language icon and press <Enter> or double click the left key of the mouse to display the screen. Then you can choose the language: English, Traditional Chinese, Simple Chinese, Russian, Korean, German, Spanish, Italian, Portuguese, Japanese.

Default

Select the default icon and press <Enter> or double click the left key of the mouse to display the screen. Then you can load optimized defaults or not.

Boot

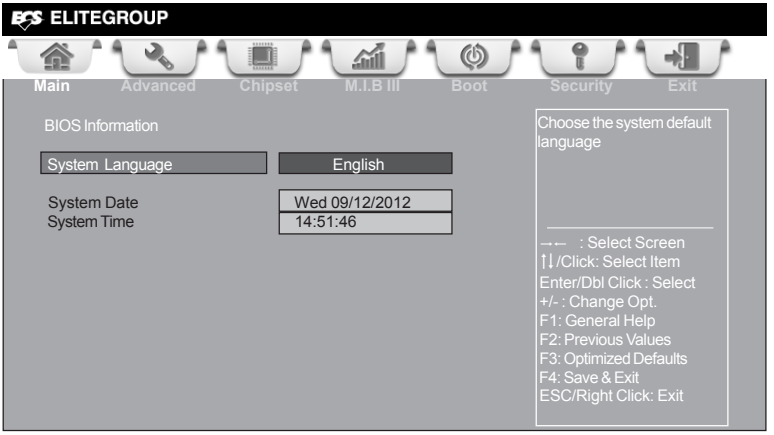
Select the boot icon and press <Enter> or double click the left key of the mouse to display the screen. Then you can choose the boot device.

Advanced

Select the advanced icon and press <Enter> or double click the left key of the mouse to display the screen.

Main Menu

This menu shows the information of BIOS and enables you to set the system language, date and time.



System Language (English)

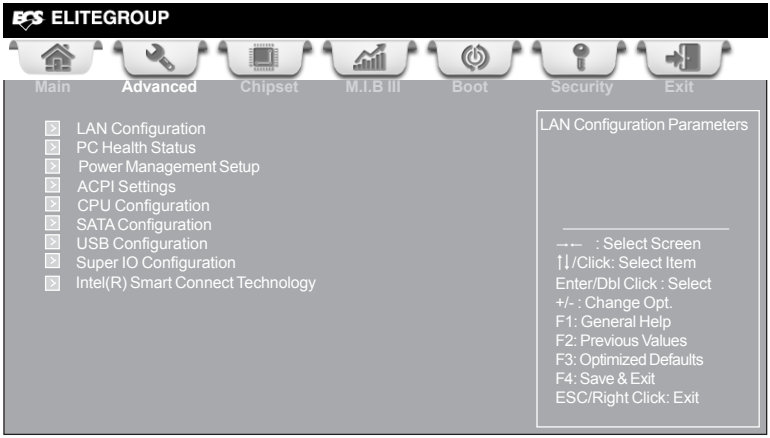
This item is used to set system language.

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

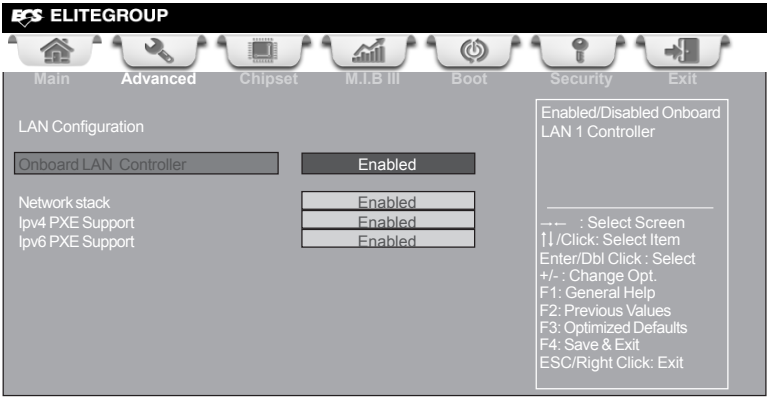
Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system.



LAN Configuration

The item in the menu shows the LAN-related information that the BIOS automatically detects.



Onboard LAN Controller (Enabled)

Use this item to enable or disable Onboard LAN 1 controller.

Network stack (Enabled)

Use this item to enable or disable UEFI network stack.

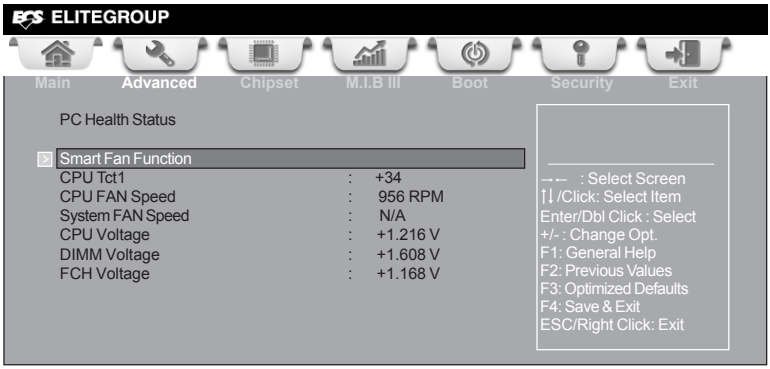
Ipv4/6 PXE Support (Enabled)

Use these items to enable or disable the Ipv4/6 PXE Boot support. If disabled IPV4/6 PXE boot option will not be created.

Press <Esc> to return to the Advanced Menu page.

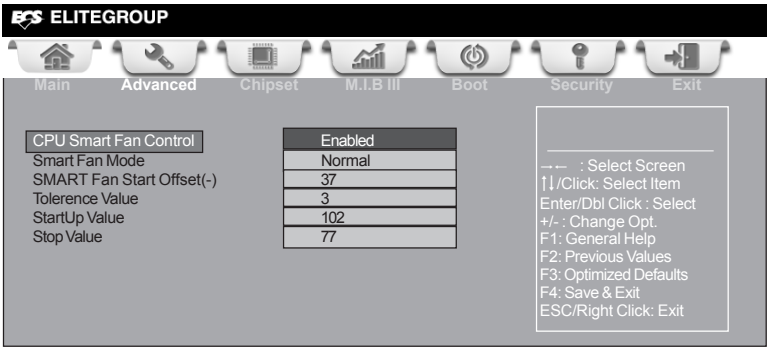
PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.



Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:

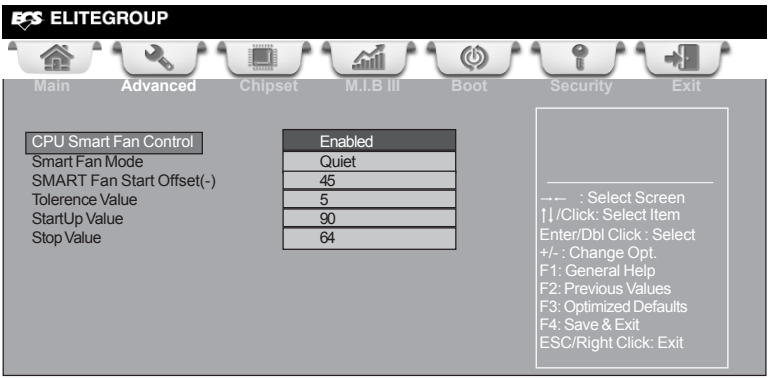


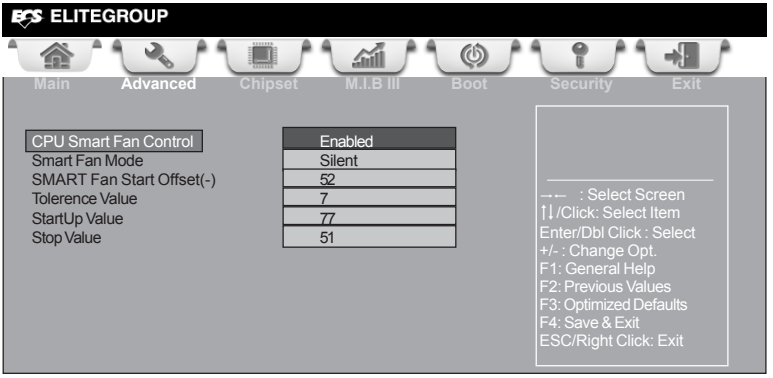
CPU/System Smart Fan Control (Enabled)

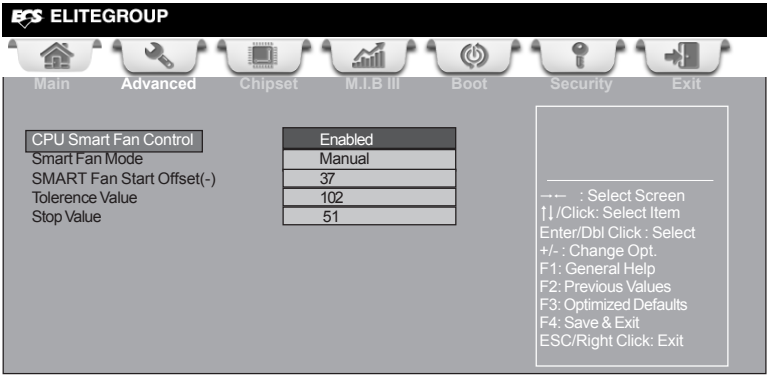
This item enables you to define the CPU/System by smartly adjusting the CPU/System Fan. When it is set at certain temperature, the CPU/System Fan PWM value will change accordingly.

Smart Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.


ELITEGROUP
Main
Advanced
Chipset
M.I.B III
Boot
Security
Exit
CPU Smart Fan Control
Smart Fan Mode
SMART Fan Start Offset(-)
Tolerence Value
StartUp Value
Stop Value
Enabled
Quiet
45
5
90
64
→← : Select Screen
↑↓/Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit


ELITEGROUP
Main
Advanced
Chipset
M.I.B III
Boot
Security
Exit
CPU Smart Fan Control
Smart Fan Mode
SMART Fan Start Offset(-)
Tolerence Value
StartUp Value
Stop Value
Enabled
Silent
52
7
77
51
→← : Select Screen
↑↓/Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit


ELITEGROUP
Main
Advanced
Chipset
M.I.B III
Boot
Security
Exit
CPU Smart Fan Control
Smart Fan Mode
SMART Fan Start Offset(-)
Tolerence Value
Stop Value
Enabled
Manual
37
102
51
→← : Select Screen
↑↓/Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit

Smart Fan Start offset(-) (37)

This item is used to set the start temperature of the smart fan.

Tolerance Value (3)

This item specifies the temperature tolerance value of the smart fan.

StartUp Value (102)

This item specifies the start PWM of the smart fan when the temperature is between the start temperature plus tolerance value and start temperature minus tolerance value.

Stop value (77)

This item specifies the PWM of the smart fan when the temperature is lower than the start temperature minus tolerance value.

Press <Esc> to return to the PC Health Status page.

System Component Characteristics

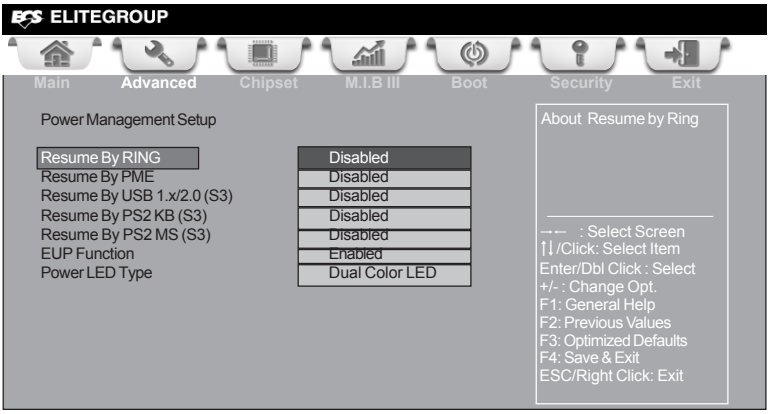
These items display the monitoring of the overall inboard hardware health events, such as System temperature, CPU & DIMM voltage, CPU & System fan speed... etc.

- CPU Tct1
- CPU Fan Speed
- System Fan Speed
- CPU Voltage
- DIMM Voltage
- FCH Voltage

Press <Esc> to return to the Advanced Menu page.

Power Management Setup

This page sets up some parameters for system power management operation.



Resume By RING (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume By PME (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Resume By USB 1.x/2.0 (S3) (Disabled)

This item allows you to enable/disable the USB 1.x/2.0 device wakeup function from S3 mode.

Resume By PS2 KB (S3) (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

EUP Function (Enabled)

This item allows user to enable or disable EUP support.

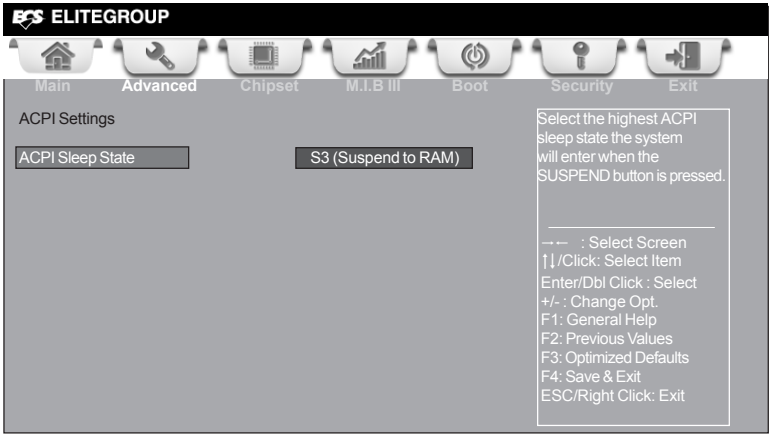
Power LED Type (Dual Color LED)

This item shows the type of the Power LED.

Press <Esc> to return to the Advanced Menu page.

ACPI Configuration

The item in the menu shows the highest ACPI sleep state when the system enters suspend.



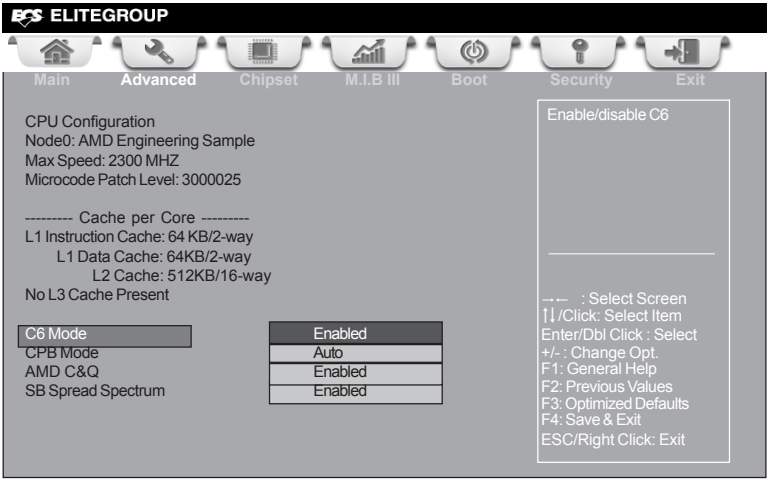
ACPI Sleep State [S3(Suspend to RAM)]

This item allows user to enter the ACPI S3 (Suspend to RAM) Sleep State (default).

Press <Esc> to return to the Advanced Menu page.

CPU Configuration

The item in the menu shows the CPU.



Max Speed (2300 MHz)

This item shows the maximum speed of the CPU.

Microcode Patch Level (3000025)

This item shows the Microcode revision.

L1 Instruction Cache (64KB/2-way)

This item shows CPU L1 Instruction Cache.

L1 Data Cache (64KB/2-way)

This item shows CPU L1 Data Cache.

L2 Cache (512KB/16-way)

This item shows CPU L2 Cache.

No L3 Cache Present

This item shows CPU L3 Cache.

C6Mode (Enabled)

This item enables or disables the C6 mode.

CPB Mode (Auto)

This item is used to set the CPB mode.

AMD C&Q (Enabled)

This item enables or disables the CPU C&Q Function.

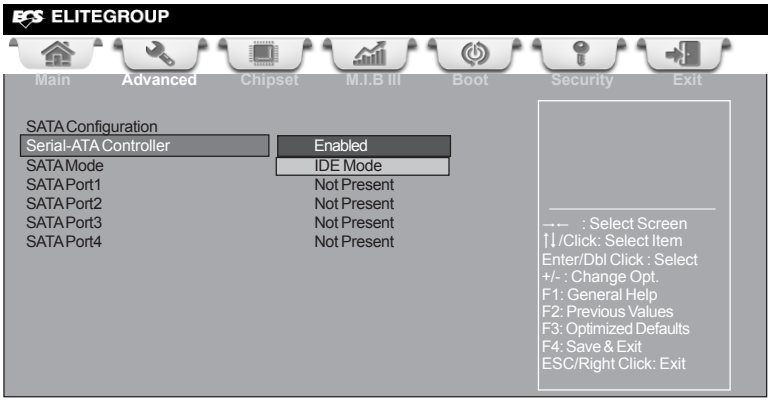
SB Spread Spectrum (Enabled)

This item enables or disables the SB Clock Spread Spectrum.

Press <Esc> to return to the Advanced Menu page.

SATA Configuration

Use this item to show the mode of serial SATA configuration options.



Serial-ATA Controller (Enabled)

This item allows you to enable or disable the Serial-ATA controller.

SATA Mode (IDE Mode)

Use this item to select SATA mode.

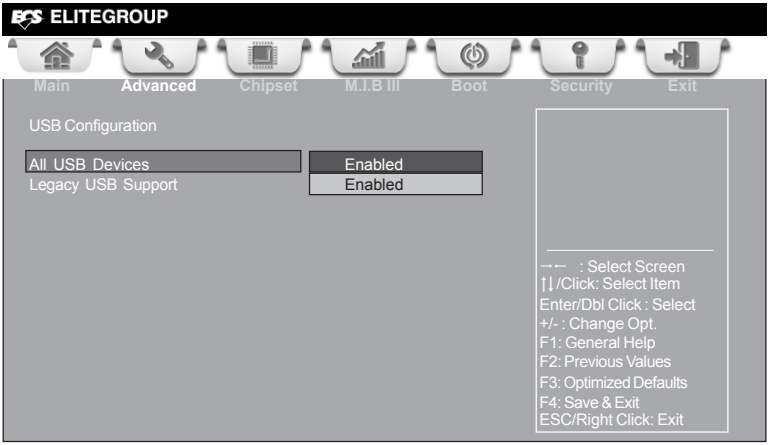
SATA Port 1~4 (Not Present)

This motherboard supports four SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

Press <Esc> to return to the Advanced Menu page.

USB Configuration

Use this item to show the information of USB configuration.



All USB Devices (Enabled)

Use this item to enable or disable all USB devices.

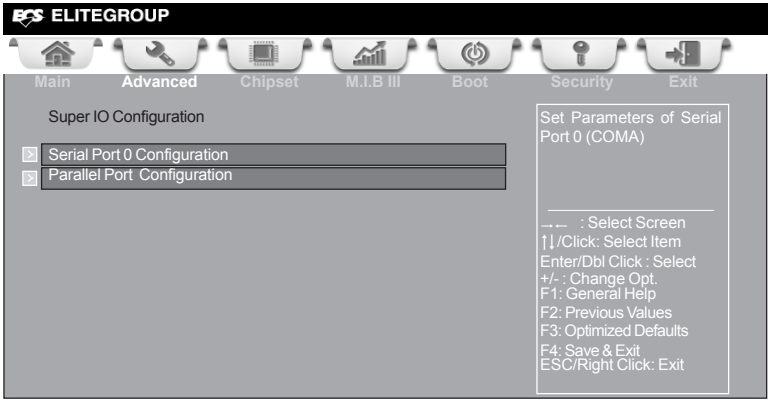
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the Advanced Menu page.

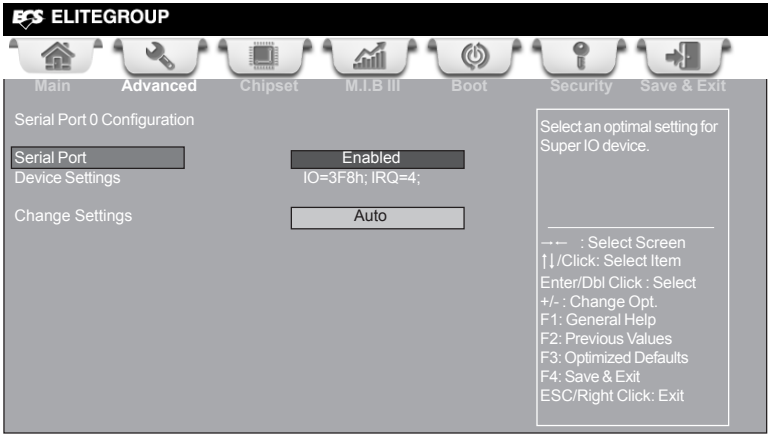
Super IO Configuration

Use this item to show the information of Super IO configuration.



Serial Port 0 Configuration

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

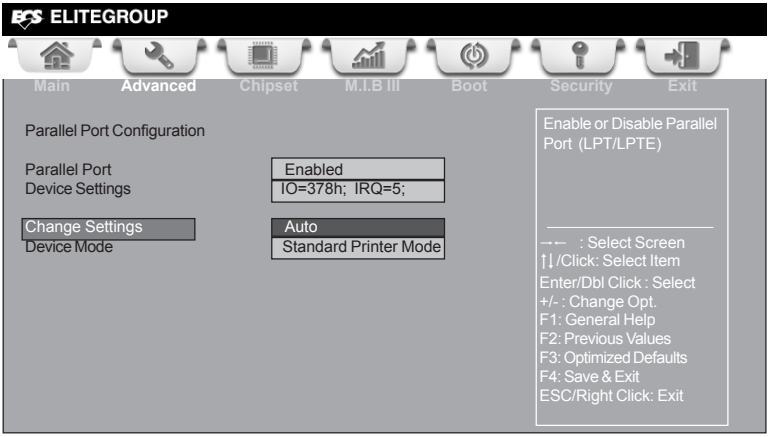
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

Parallel Port Configuration

Scroll to this item and press <Enter> to view the following screen:



Parallel Port (Enabled)

This item allows you to enable or disable parallel port.

Device Settings (IO=378h; IRQ=5)

This item shows the information of the device settings.

Change Settings (Auto)

Use this item to change device settings.

Device Mode (Standard Printer Mode)

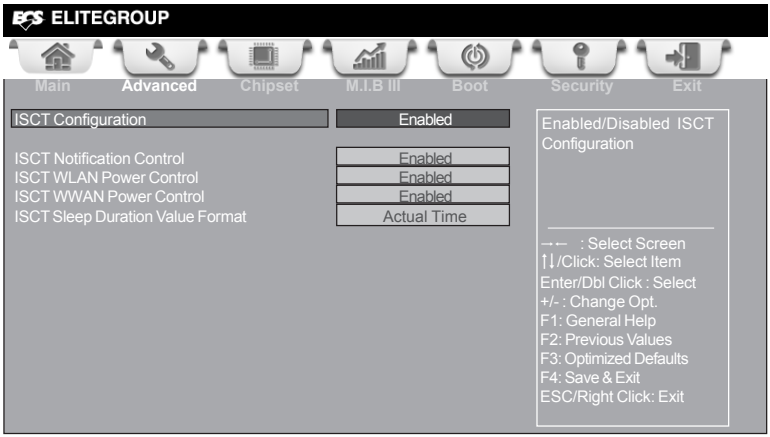
This item shows the information of the device mode.

Press <Esc> to return to the Super IO Configuration page.

Press <Esc> to return to the Advanced Menu page.

Intel(R) Smart Connect Technology

Use this item to show the information of Intel(R) Smart Connect Technology.



ISCT Configuration (Enabled)

Use this item to enable/disable ISCT Configuration.

ISCT Notification Control (Enabled)

Use this item to enable/disable ISCT Notification Control.

ISCT WLAN Power Control (Enabled)

Use this item to enable/disable ISCT WLAN Power Control.

ISCT WWAN Power Control (Enabled)

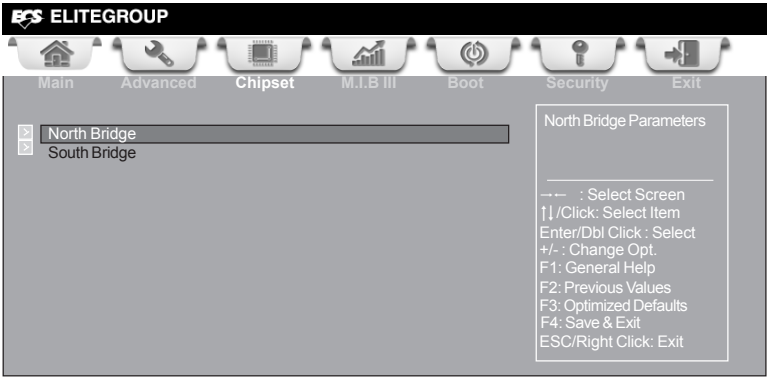
Use this item to enable/disable ISCT WWAN Power Control.

ISCT Sleep Duration Value Format (Actual Time)

Use this item to select actual time or duration in seconds. (ISCT 2.0)

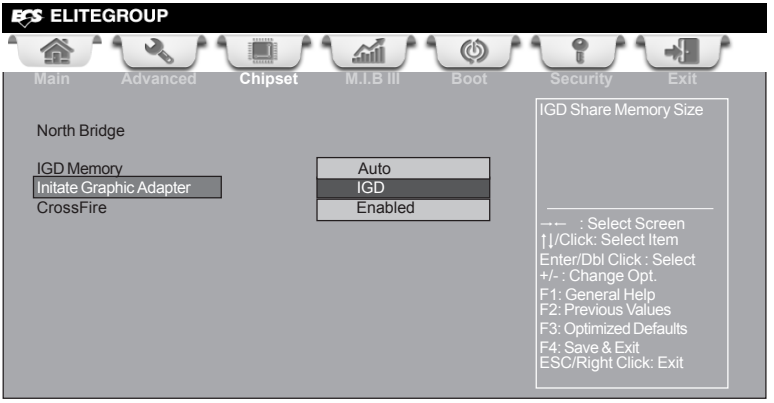
Chipset Menu

The chipset menu items allow you to change the settings for the North Bridge chipset, South Bridge chipset and other system.



North Bridge

Scroll to this item and press <Enter> to view the following screen:



IGD Memory (Auto)

This item shows the information of the IGD (Internal Graphics Device) memory.

Initate Graphic Adapter (IGD)

This item allows you to select graphics controller to use as the primary boot device.

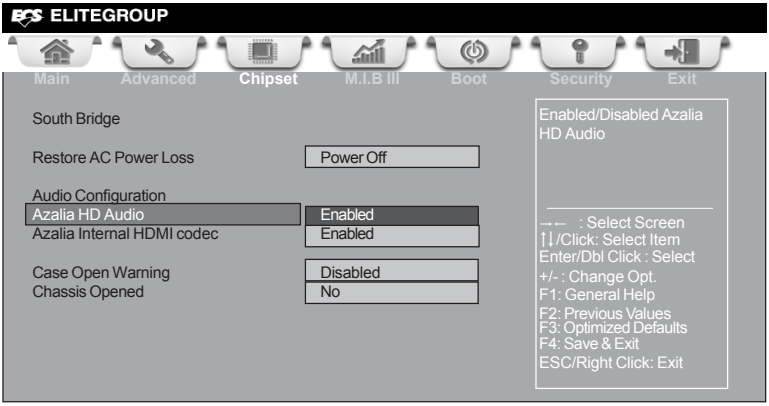
CrossFire (Enabled)

This item allows you to enableb or disable CrossFire function.

Press <Esc> to return to the Chipset Menu page.

South Bridge

Scroll to this item and press <Enter> to view the following screen:



Restore AC Power Loss (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Audio Configuration

This item shows the information of the audio configuration.

Azalia HD Audio (Enabled)

This item enables or disables Azalia HD audio.

Azalia Internal HDMI codec (Enabled)*

This item enables or disables Azalia Internal HDMI codec.

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

Chassis Opened (No)

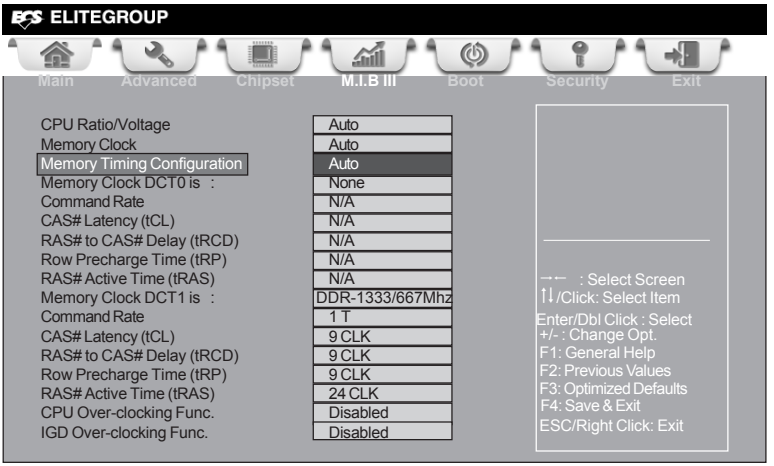
This item indicates whether the case has been opened.

Press <Esc> to return to the Chipset Menu page.

*NOTE: *This item will not appear if the motherboard doesnot have the HDMI port. Please take the actual BIOS for the standard.*

M.I.B III (MB Intelligent BIOS III) Menu

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.



CPU Ratio/Voltage (Auto)

This item is used to set the CPU Ratio/Voltage.

Memory Clock (Auto)

This item is used to set the memory clock.

Memory Timing Configuration

This item shows the information of Memory Timing.

CAS Latency (tCL) (9)

This item determines the operation of DDR SDRAM memory CAS (column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.

Memory Clock DCT0 is: (None)

This item shows current memory clock of DCT0.

Memory Clock DCT1 is: (DDR-1333/667Mhz)

This item shows current memory clock of DCT1.

Command Rate (N/A / 1T)

This item shows the command rate.

RAS# to CAS# Delay (tRCD) (N/A / 9)

This item specifies the RAS# to CAS# delay to Rd/Wr command to the same bank.

Row Precharge Time (tRP) (N/A /9)

This item specifies Row precharge to Active or Auto-Refresh of the same bank.

RAS# Active Time (tRAS) (N/A /24)

This item specifies the RAS# active time.

CPU Over-clocking Func. (Disabled)

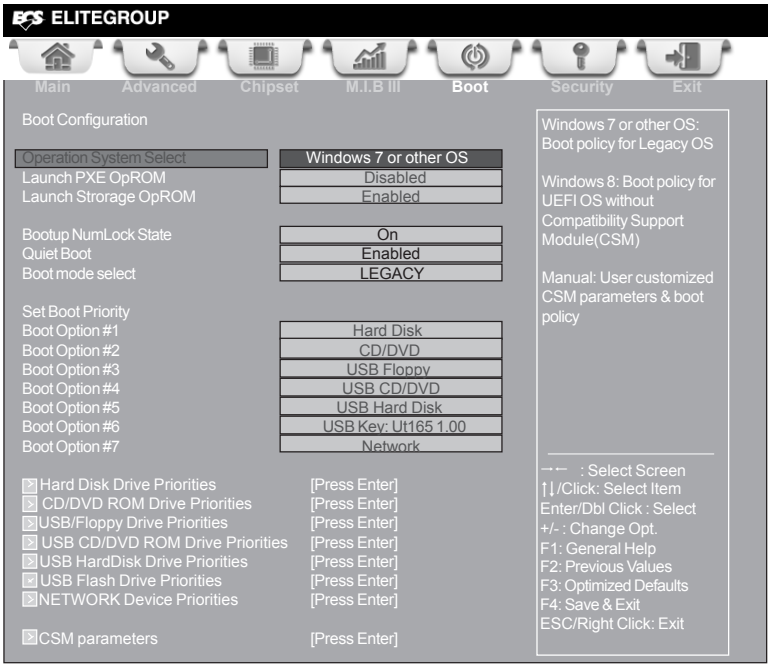
This item enables or disables CPU over-clocking function.

IGD Over-clocking Func. (Disabled)

This item enables or disables IGD over-clocking function.

Boot Menu

This page enables you to set the keyboard NumLock state.



Boot Configuration

This item shows the information of the Boot Configuration.

Operation System Select (Windows 7 or other OS)

This item is used to select the operation system.

Launch PXE OpROM (Disabled)

The item enables or disables launch PXE Option ROM.

Launch Storage OpROM (Enabled)

Use this item to enable or disable the Storage OpROM.

Bootup NumLock State (On)

This item enables you to select NumLock state.

Quiet Boot (Enabled)

This item enables or disables quiet boot.

Boot mode select (LEGACY)

Use this item to select boot mode.

Set Boot Priority

This item enables you to set boot priority for all boot devices.

Boot Option #1/2/3/4/5/6/7

These items show the boot priorities.

Hard Disk Drive/ CD/DVD ROM Drive/ USB/IDE Floppy Drive/ USB CD/DVD ROM Drive/ USB HardDisk Drive/ USB Flash Drive/ NETWORK Device Drive Priorities

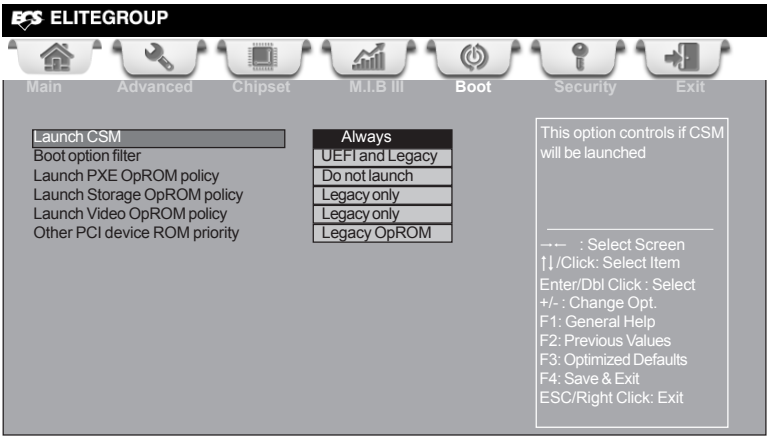
These items enable you to specify the sequence of loading the operating system. Press <Enter> to see the submenu.

CSM parameters

OpROM execution, boot options filter,etc.

CSM parameters

Scroll to this item and press <Enter> to view the following screen.



Launch CSM (Always)

This option controls if CSM will be launched.

Boot option filter (UEFI and Legacy)

This option controls what devices system can boot to.

Launch PXE OpROM policy (Do not Launch)

This controls the execution of UEFI and Legacy PXE OpROM.

Launch Storage OpROM policy (Legacy only)

This controls the execution of UEFI and Legacy Storage OpROM.

Launch Video OpROM policy (Legacy only)

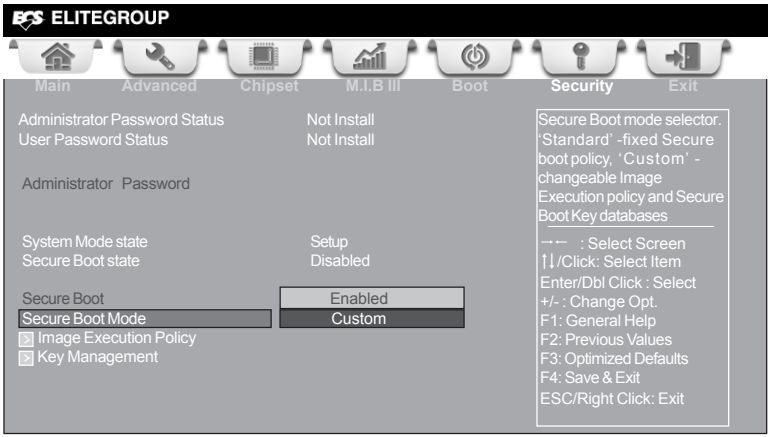
This controls the execution of UEFI and Legacy Video OpROM.

Other PCI device ROM priority (Legacy OpROM)

For PCI devices other than Network, Mass storage or Video defines which OpROM to launch.

Security Menu

This page enables you to set setup administrator password and user password.



Administrator Password Status (Not Install)

This item shows administrator password installed or not.

User Password Status (Not Install)

This item shows user password installed or not.

System Mode state (Setup)

This item shows system mode setup or not.

Secure Boot state (Disabled)

This item allows you to enable or disable the secure boot state.

Secure Boot (Enabled)

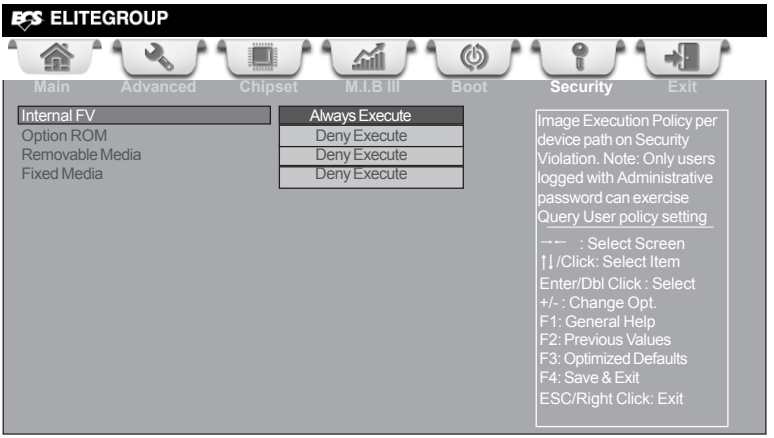
This item is used to control the secure boot flow, it is possible only if system runs in User Mode.

Secure Boot Mode (Custom)

This item is used to select secure boot mode, when you select standard mode, secure boot policy is fixed; when you select custom mode, the image execution policy and secure boot key databases are changeable.

Image Execution Policy

Scroll to this item to view the following screen:



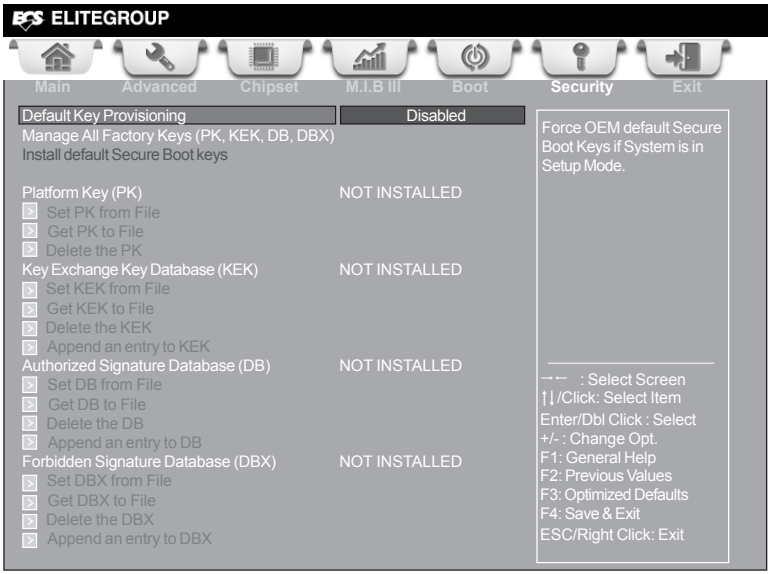
Internal FV/Option ROM/Removable Media/Fixed Media (Always Execute/Deny Execute)

These items allow you to select image execution policy per device path on security violation. Only users logged with administrative password can exercise query user policy setting.

Press <Esc> to return to the Security Menu page.

Key Management

Scroll to this item to view the following screen:



Default Key Provisioning (Disabled)

This item enables or disables you to force OEM default secure boot keys if system is in setup mode.

Platform Key (PK)

This item shows the information of the platform key.

Set PK/KEK/DB/DBX from File

This item launches the file browser to set Efi Variable from the file. The file data must be formatted as Efi Variable with TimeBased Authenticated Header.

Get PK/KEK/DB/DBX to File

This item is used to store secure variable to a file with a matching name in selected file system's root.

Delete the PK/KEK/DB/DBX

This item is used to delete the variable.

Key Exchange Key Database (KEK)

This item shows the information of the key exchange key database.

Authorized Signature Database (DB)

This item shows the information of the authorized signature database.

Forbidden Signature Database (DBX)

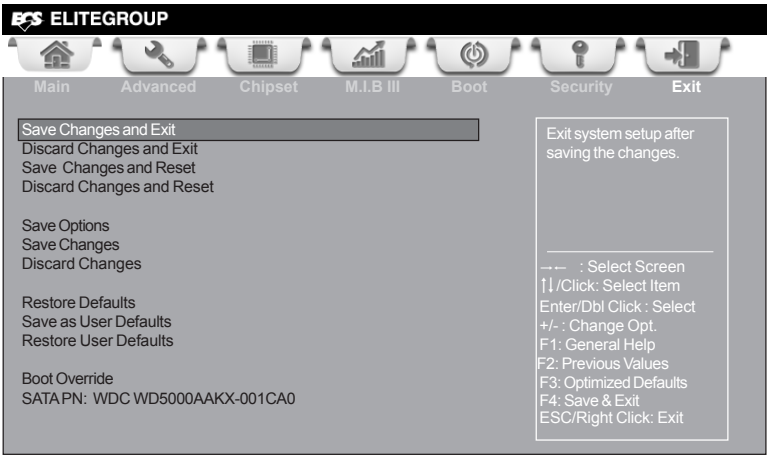
This item shows the information of the forbidden signature database.

Append an entry to KEK/DB/DBX

This item launches the file browser to Append new signature database from the file. The file data must be formatted as Efi Variable with TimeBased Authenticated Header.

Exit Menu

This page enables you to exit system setup after saving or without saving the changes.



Save Changes and Exit

This item enables you to exit system setup after saving the changes.

Discard Changes and Exit

This item enables you to exit system setup without saving any changes.

Save Changes and Reset

This item enables you to reset the system setup after saving the changes.

Discard Changes and Reset

This item enables you to reset system setup without saving any changes.

Save Options

This item enables you to save the options that you have made.

Save Changes

This item enables you to save the changes that you have made.

Discard Changes

This item enables you to discard any changes that you have made.

Restore Defaults

This item enables you to restore the system defaults.

Save as User Defaults

This item enables you to save the changes that you have made as user defaults.

Restore User Defaults

This item enables you to restore user defaults to all the setup options.

Boot Override

Use this item to select the boot device.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Website. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

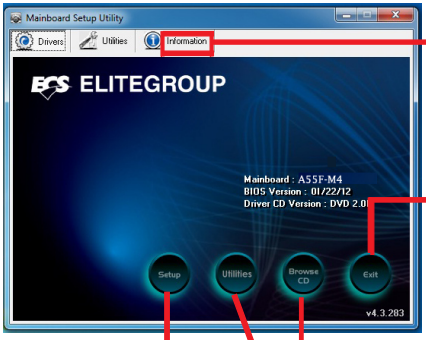
Memo

Chapter 4

Using the Motherboard Software

Auto-installing under Windows XP/7/8

The auto-install DVD-ROM makes it easy for you to install the drivers and software. The support software DVD-ROM disc loads automatically under Windows XP/7/8. When you insert the DVD-ROM disc in the DVD-ROM drive, the auto-run feature will automatically bring up the installation screen. The screen has four buttons on it: **Setup**, **Utilities**, **Browse CD** and **Exit**.



Information:
Displays the path for all software and drivers available on the disk.

Click "**Exit**" button to close the Auto-Setup window.

Browse CD:
Open Windows Explorer and show the contents of the support disk.

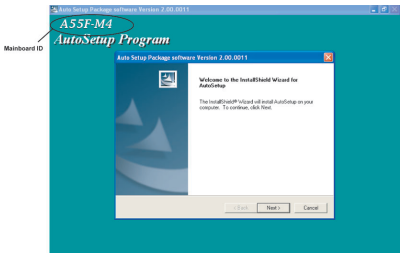
Click the "**Setup**" button to select and run the software installation program.

Click the "**Utilities**" button to select and install ECS Intelligent Utility.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

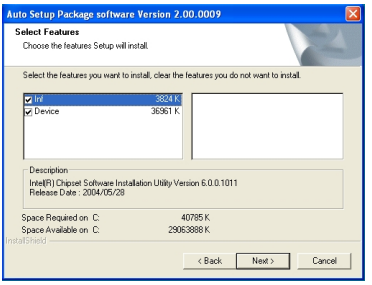
1. Click **Setup**. The installation program begins:



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

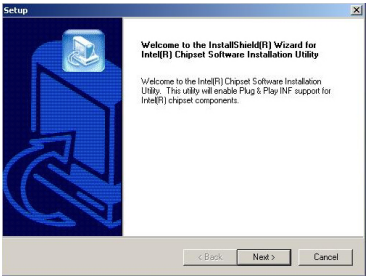
The motherboard identification is located in the upper left-hand corner.

2. Click **Next.** The following screen appears:


Auto Setup Package software Version 2.00.0009
Select Features
Choose the features Setup will install.
Select the features you want to install, clear the features you do not want to install.
Inf 3824 K
Device 36961 K
Description
Intel(R) Chipset Software Installation Utility Version 6.0.0.1011
Release Date : 2004/05/28
Space Required on C: 40795 K
Space Available on C: 29063888 K
InstallShield
< Back
Next >
Cancel

3. Check the box next to the items you want to install. The default options are recommended.

4. Click **Next** to run the Installation Wizard. An item installation screen appears:

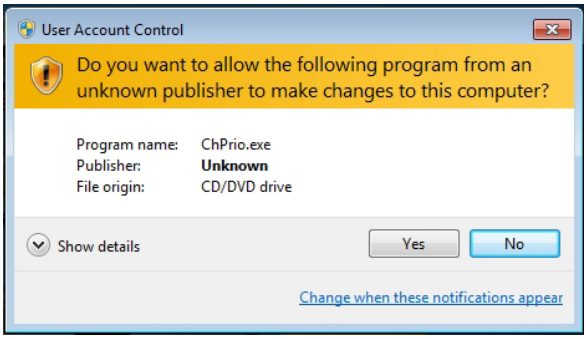

Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

5. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to re-start a few times to complete the installation.

Windows 8 will show the following screen after system restart, you must select "Desktop" in the bottom left to install the next driver.

Windows 7/8 will appear below UAC (User Account Control) message after the system restart. You must select "Yes" to install the next driver. Continue this process to complete the drivers installation.


User Account Control
Do you want to allow the following program from an unknown publisher to make changes to this computer?
Program name: ChPrio.exe
Publisher: Unknown
File origin: CD/DVD drive
Show details
Yes
No
Change when these notifications appear

Manual Installation

If the auto-install DVD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Look for the chipset and motherboard model, and then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

ECS Utility Software (Intelligent EZ Utility)

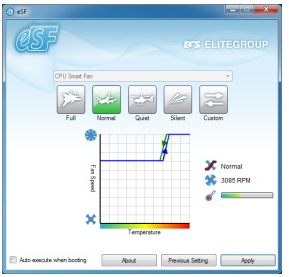
ECS Intelligent EZ Utility provides friendly interfaces under Windows O.S, which makes your computing more easily and conveniently.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

eSF

eSF(Smart Fan) utility provides easy and safe way to adjust fan speed in accordance with your PC's system loading and temperature.

It has five modes to adjust fan speed in a safe range without entering the BIOS to optimize your system cooling environment.



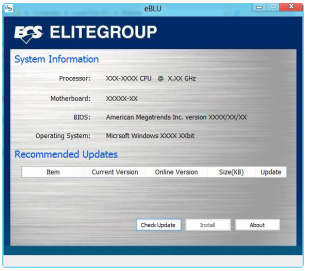
Microsoft .NET Framework 3.5 is required.

eDLU

ECS eDLU utility makes updating drivers fast and easy. eDLU saves time and hassle by listing all the latest drivers online. Just select the one you prefer and start to download and install the drivers.

eBLU

ECS eBLU utility makes BIOS update faster and easier. eBLU will list the latest BIOS with a default check-mark. Click"install" button to install.



Microsoft .NET Framework 3.5 is required.

Chapter 5

CrossFire™ Technology (AMD Dual Graphics) Support

CrossFire™ Technology

The CrossFire™ technology provides significant display performance boost to AMD-based systems by inserting the external PCI Express graphics card and enabling both the discrete GPU and the AMD A55 graphics core to render simultaneously in CrossFire™ mode.

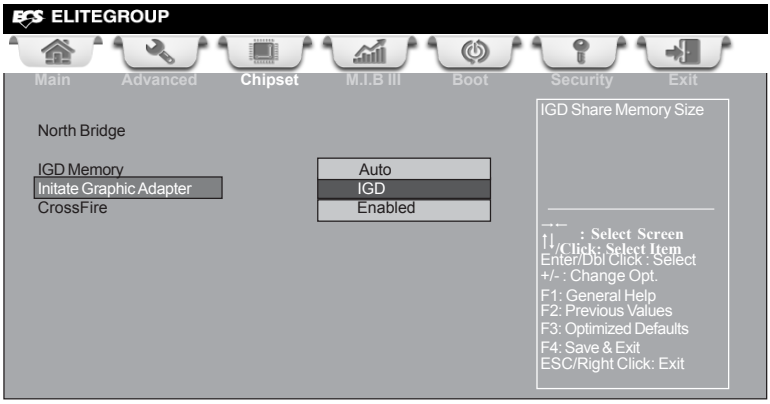
Follow the steps below to start the CrossFire™ technology.

1. Insert a graphics card (which can be used for CrossFire™ technology, such as HD6670 series) into the **PCIEX16** slot.

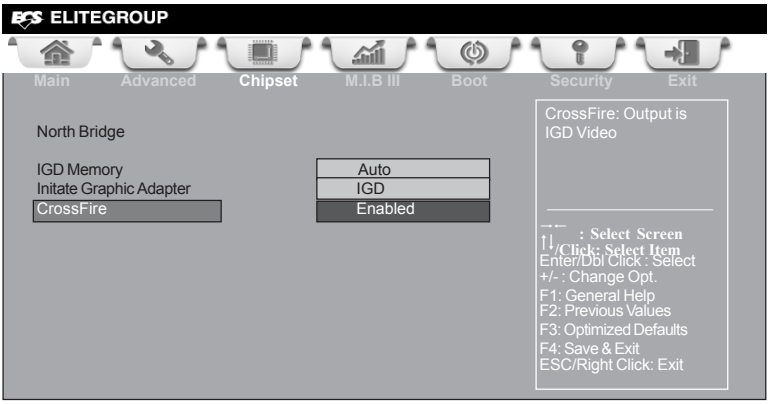
   Make sure that the card is properly seated on the slot.

* For reference only

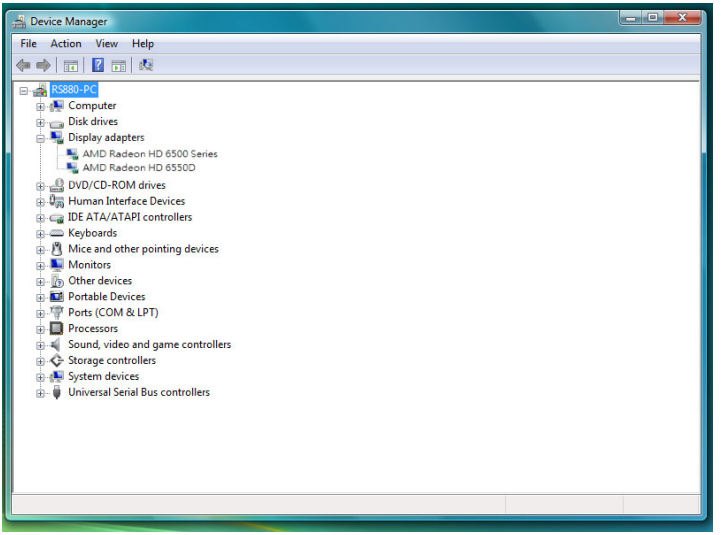
2. For CrossFire™, you must enter the BIOS, set the *Initate Graphic Adapter* in *Advanced Menu* to **IGD**. Then press F4 to save the configuration and exit the BIOS.



3. Set the *CrossFire* in *Advanced Menu* to **Enabled**. Then press F4 to save the configuration and exit the BIOS.



4. Click with your right mouse button on *My Computer*, then click the option *Manage* and choose the *Device Manager*, finally, click the Display Adapters. The following screen appears. Be sure that the External ATI graphics (ATI Radeon HD 6670) and Onboard graphics (Radeon HD 6530D or HD6550D) are both displaying in the Display adapters.



Supported DUAL Graphics Combinations

"Lynx" Platform

DISCRETE GPU			DESKTOP APU		
Discrete Graphics Product	Radeon™ Brand	Frame Buffer	A4-Series "WinterPark" HD 6410D	A6-Series "BeaverCreek" HD 6530D	A8-Series "BeaverCreek" HD 6550D
Desktop Configurations					
Turks XT	HD6670	GDDR5	Attach Only (No DG)	HD 6690D2	HD 6690D2*
Turks Pro	HD6570	DDR3	Attach Only (No DG)	HD 6610D2*	HD 6630D2*
Caicos	HD6450	GDDR5	HD 6510D2*	HD 6550D2	HD 6550D2
Cedar	HD6350	DDR3	HD 6430D2	Attach Only (No DG)	Attach Only (No DG)

"Attach Only (No DG)" indicates supported discrete graphics attachment without Dual Graphics.

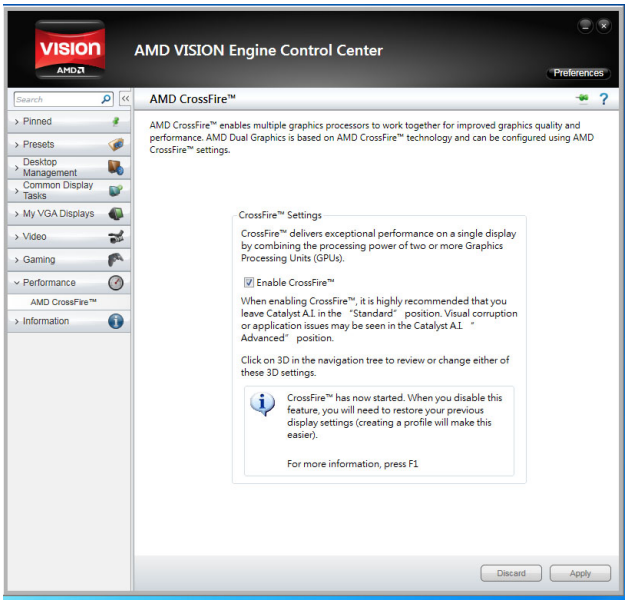
"HD 6XXXX2" indicates Dual-Graphics is supported with the resulting Dual-Graphics model number

* Recommended discrete graphics combinations

E-Series products do not support Dual Graphics

Please reference latest AMD Dual Graphics® Technology Graphic Card support list on AMD official website and subject to change without notice.

5. Enter AMD VISION Engine Control Center, you can see the option of *CrossFire™*, click it and select *Enable CrossFire™,* then CrossFire™ starts.


VISION
AMD
AMD VISION Engine Control Center
Preferences
Search
Pinned
Presets
Desktop Management
Common Display Tasks
My VGA Displays
Video
Gaming
Performance
AMD CrossFire™
Information
AMD CrossFire™
AMD CrossFire™ enables multiple graphics processors to work together for improved graphics quality and performance. AMD Dual Graphics is based on AMD CrossFire™ technology and can be configured using AMD CrossFire™ settings.
CrossFire™ Settings
CrossFire™ delivers exceptional performance on a single display by combining the processing power of two or more Graphics Processing Units (GPUs).
Enable CrossFire™
When enabling CrossFire™, it is highly recommended that you leave Catalyst A.I. in the "Standard" position. Visual corruption or application issues may be seen in the Catalyst A.I. " Advanced" position.
Click on 3D in the navigation tree to review or change either of these 3D settings.
CrossFire™ has now started. When you disable this feature, you will need to restore your previous display settings (creating a profile will make this easier).
For more information, press F1
Discard
Apply

To disable CrossFire™, please make sure to cancel Enable CrossFire™ in Catalyst Control Center firstly.

Recommendation

1.The APU in the A55 platform delivers a discrete-class of graphics performance and enables leading GPU compute capability

-Adding a discrete GPU is optional to extend graphics and GPU compute capacity

2.For optimal performance uplift, AMD recommends Dual Graphics (CrossFire™ Technology) combinations of

-A4 and Discrete GPU model Radeon HD6450
-A6 and Discrete GPU model Radeon HD6570
-A8 and Discrete GPU model Radeon HD6570 or HD6670

3.AMD recommends a balanced system memory configuration of at least 4GB of 1333-DDR3 (2GB x 2GB).
Single channel and unbalanced memory configuration can promise both APU and Dual Graphics performance.

4.CrossFire™ Technology (AMD Dual Graphics) Support on OS Windows 7 only due to the limitation by AMD.

Chapter 6
Setting Up AMD A55 RAID Configuration

Setting Up a bootable RAID Array

This section explains how to configure a bootable AMD RAID array.

Setting Up the BIOS

1. Start your computer, then press Delete to enter the BIOS setup.

   The BIOS CMOS Setup Utility screen appears.

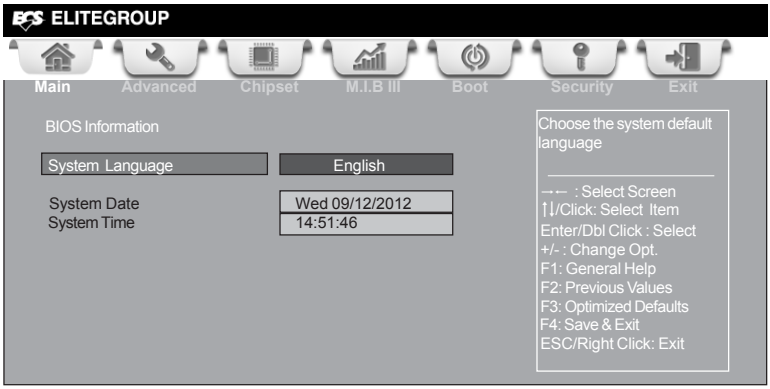


Figure 1.1 BIOS CMOS Setup Utility Main Screen

2. Use the arrow keys to select Advanced menu (see Figure 1.1), then select SATA Configuration and press Enter.

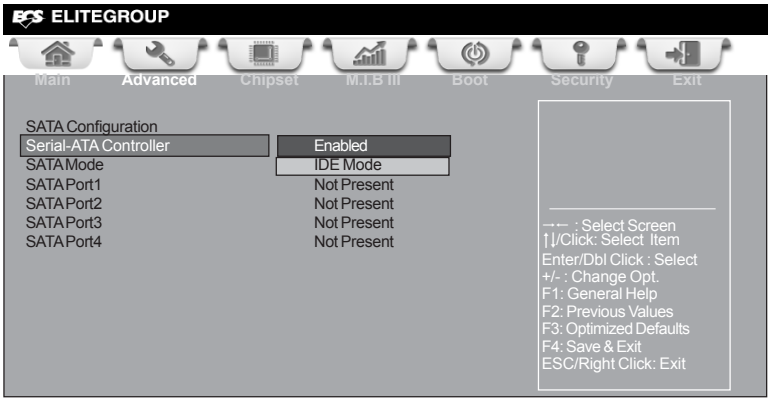


Figure 1.2 SATA Configuration Screen

3. Use the arrow keys to select the SATA Configuration (see Figure 1.2) and globally set SATA Configuration to RAID.

4. Press F4 to save the configuration and exit.

   The PC reboots.

5. Enter the RAID BIOS Setup by pressing Ctrl-F when prompted, and proceed to set up the AMD RAID BIOS as described in the next section.

Configuring the AMD RAID BIOS (Windows XP Installation)

The AMD RAID BIOS set up lets you choose the RAID type and which hard drives you want to make part of the array.

Entering the RAID BIOS Setup:

1. Wait until you see the RAID software prompting you to press Ctrl-F.

   The RAID prompt appears as part of the system POST and boot process prior to loading of the OS. You have a few seconds to press Ctrl-F before the screen disappears.

2. Press Ctrl-F.

   The Main Menu screen appears (Figure 1.3).

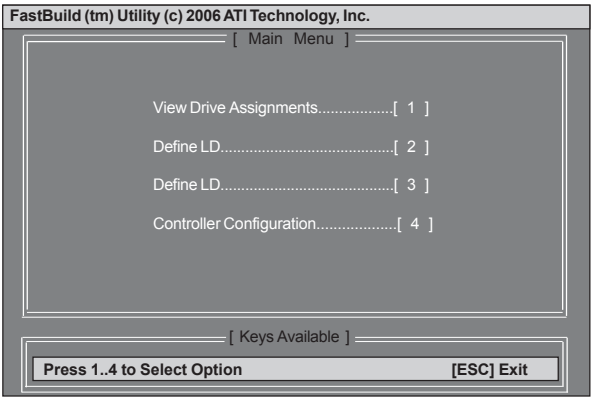

FastBuild (tm) Utility (c) 2006 ATI Technology, Inc.
[Main Menu]
View Drive Assignments.....[1]
Define LD.....[2]
Define LD.....[3]
Controller Configuration.....[4]
[Keys Available]
Press 1..4 to Select Option
[ESC] Exit

Figure 1.3 Main Menu

3. Select [2], then select LD 1 in the following page.

The Define LD Menu screen appears (Figure 1.4).

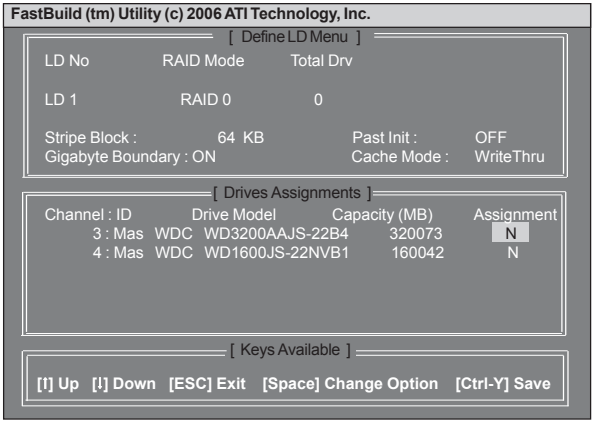

FastBuild (tm) Utility (c) 2006 ATI Technology, Inc.
[Define LD Menu]
LD No RAID Mode Total Drv
LD 1 RAID 0 0
Stripe Block : 64 KB
Past Init : OFF
Gigabyte Boundary : ON
Cache Mode : WriteThru
[Drives Assignments]
Channel : ID Drive Model Capacity (MB) Assignment
3 : Mas WDC WD3200AAJS-22B4 320073 N
4 : Mas WDC WD1600JS-22NVB1 160042 N
[Keys Available]
[↑] Up [↓] Down [ESC] Exit [Space] Change Option [Ctrl-Y] Save

Figure 1.4 Define LD Menu

Using the Define a New Array Screen

If necessary, press the tab key to move from field to field until the appropriate field is highlighted.

Note: If you want to use the function of the following RAID Mode, you have to install enough HDD.

RAID READY (1 piece of HDD); RAID 0,1 ,JBOD (2 or more pieces of HDD); RAID 0+1 (4 pieces of HDD)

- **Selecting the RAID Mode**

  By default, this is set to Mirroring. To change to a different RAID mode, press the spacebar until the mode that you want appears in the RAID Mode box—RAID0/1/10/JBOD.

  Note: Not all RAID levels are supported on all platforms.

- **Selecting the Stripe Block Size**

  Stripe block size is given in kilobytes, and affects how data is arranged on the disk. It is recommended to leave this value at the default Optimal, which is 64KB, but the values can be 64 KB and 128 KB. When choose RAID 1, the Stripe block size is unchangeable.

Assigning the Disks

1. Select the Assignment to Y to designate a free disk to be used as a RAID array disk.

   Figure 1.5 illustrates the Define a New Array screen after two disks have been assigned as RAID 0 array disks.

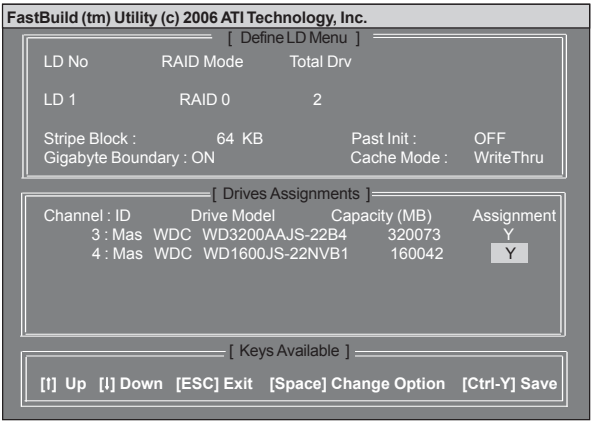

FastBuild (tm) Utility (c) 2006 ATI Technology, Inc.
[Define LD Menu]
LD No RAID Mode Total Drv
LD 1 RAID 0 2
Stripe Block : 64 KB
Gigabyte Boundary : ON
Past Init : OFF
Cache Mode : WriteThru
[Drives Assignments]
Channel : ID Drive Model Capacity (MB) Assignment
3 : Mas WDC WD3200AAJS-22B4 320073 Y
4 : Mas WDC WD1600JS-22NVB1 160042 Y
[Keys Available]
[↑] Up [↓] Down [ESC] Exit [Space] Change Option [Ctrl-Y] Save

Figure 1.5 FastBuild Utility—Array Disks Assigned

2. Press Ctrl-Y to save the configuration and exit.

   The Define LD Menu screen appears (Figure 1.6).

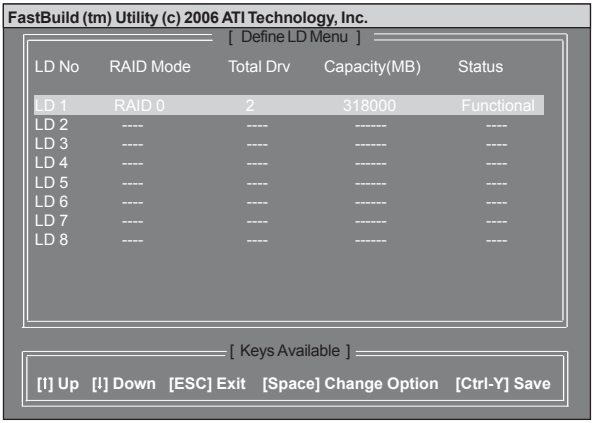
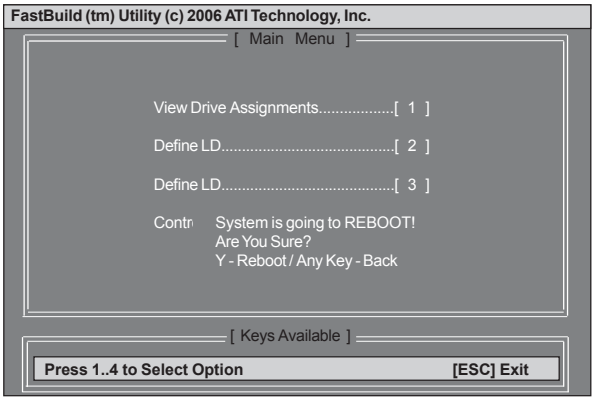

FastBuild (tm) Utility (c) 2006 ATI Technology, Inc.
[Define LD Menu]
LD No RAID Mode Total Drv Capacity(MB) Status
LD 1 RAID 0 2 318000 Functional
LD 2 ---- ---- ------ ----
LD 3 ---- ---- ------ ----
LD 4 ---- ---- ------ ----
LD 5 ---- ---- ------ ----
LD 6 ---- ---- ------ ----
LD 7 ---- ---- ------ ----
LD 8 ---- ---- ------ ----
[Keys Available]
[↑] Up [↓] Down [ESC] Exit [Space] Change Option [Ctrl-Y] Save

Figure 1.6 Define LD Menu

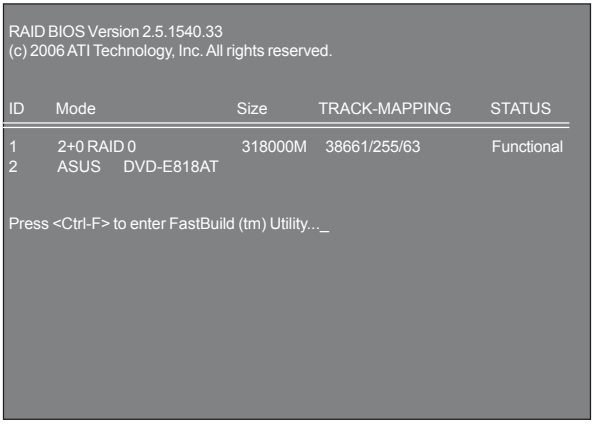
3. Press ESC to exit.

The Main Menu screen appears (Figure 1.7).


FastBuild (tm) Utility (c) 2006 ATI Technology, Inc.
[Main Menu]
View Drive Assignments.....[1]
Define LD.....[2]
Define LD.....[3]
Contr
System is going to REBOOT!
Are You Sure?
Y - Reboot / Any Key - Back
[Keys Available]
Press 1..4 to Select Option
[ESC] Exit

Press Y to reboot.

The following screen appears (Figure 1.8).


RAID BIOS Version 2.5.1540.33
(c) 2006 ATI Technology, Inc. All rights reserved.
ID Mode Size TRACK-MAPPING STATUS
1 2+0 RAID 0 318000M 38661/255/63 Functional
2 ASUS DVD-E818AT
Press <Ctrl-F> to enter FastBuild (tm) Utility..._

Installing the RAID Drivers

Your system may come with a Windows install CD that already includes AMD RAID drivers. If so, then this section is not relevant.

If that is not the case (or you are trying to install a new version of Windows), then you will need an AMD RAID driver F6 install floppy. Check to see if one came with your system. If not, you can create one by downloading the appropriate driver package and following the steps in this section.

1. Copy all files in "...\RAID\ATI\A55\Floppy\Win3264" to a floppy disk.
2. After you complete the RAID BIOS setup, boot from the Windows CD. The Windows Setup program starts.

Figure 1.9

3. Press F6 and wait a few moments for the Windows Setup screen to appear.

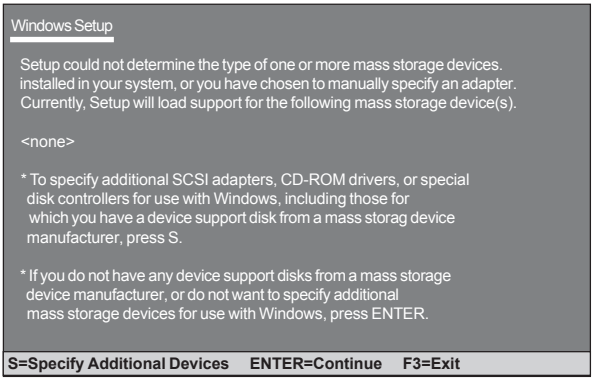

Windows Setup
Setup could not determine the type of one or more mass storage devices.
installed in your system, or you have chosen to manually specify an adapter.
Currently, Setup will load support for the following mass storage device(s).
<none>
* To specify additional SCSI adapters, CD-ROM drivers, or special disk controllers for use with Windows, including those for which you have a device support disk from a mass storag device manufacturer, press S.
* If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows, press ENTER.
S=Specify Additional Devices ENTER=Continue F3=Exit

Figure 1.10 Windows Setup—Specify Devices

4. Specify the AMD drivers.

a Insert the floppy that has the RAID driver, press S, then press Enter.

The following Windows Setup screen appears:

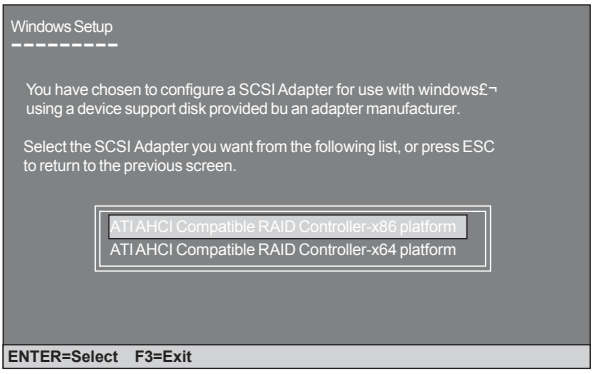

Windows Setup
You have chosen to configure a SCSI Adapter for use with windows£¬
using a device support disk provided bu an adapter manufacturer.
Select the SCSI Adapter you want from the following list, or press ESC
to return to the previous screen.
ATI AHCI Compatible RAID Controller-x86 platform
ATI AHCI Compatible RAID Controller-x64 platform
ENTER=Select F3=Exit

Figure 1.11 Windows Setup—Selected SCSI Adapter

b Select "ATI AHCI Compatible RAID Controller-x86 platform" and press Enter for 32-bit OS or Select "ATI AHCI Compatible RAID Controller-x64 platform" and press Enter for 64-bit OS.

The following Windows Setup screen appears listing both drivers:.

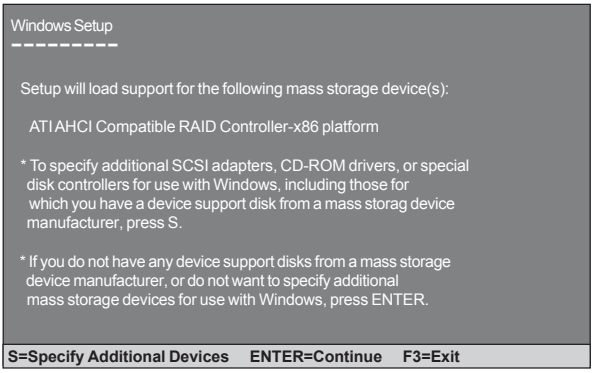

Windows Setup
Setup will load support for the following mass storage device(s):
ATI AHCI Compatible RAID Controller-x86 platform
* To specify additional SCSI adapters, CD-ROM drivers, or special disk controllers for use with Windows, including those for which you have a device support disk from a mass storag device manufacturer, press S.
* If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows, press ENTER.
S=Specify Additional Devices ENTER=Continue F3=Exit

Figure 1.12 Windows Setup—AMD drives listed

5. Press Enter to continue with Windows XP Installation.

Be sure to leave the floppy disk inserted in the floppy drive until the blue screen portion of Windows XP installation is completed, then take out the floppy.

6. Follow the instructions on how to install Windows XP.

After Windows XP is completely installed, it is recommended that you install the ForceWare software in order to access the FastBuild RAID Management tool.

Note: Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.

Memo

Chapter 7
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips. You may also log onto our ECS website for more information: *http:// www.ecs.com.tw/ECSWebSite/Support/Support_FAQ.aspx?MenuID=49& childid=M 49&LanID=0*

a) System does not power up and the fans are not running.

1. Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Make sure the power cord is plugged into the wall socket & the switch on the Power Supply Unit (PSU) is turned " on " as well. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.

2. Check the VGA adapter card (if applicable) is inserted properly.

3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps: memory not detected
   b. 1 long beep and 8 short beeps: VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Apply the thermal grease onto the CPU heatsink & ensure the CPU fan is well-connected with the CPU heatsink. Check if the CPU fan is working properly while the system is running.

2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

4. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

5. Check whether there is any bulked up electrolytic capacitor or abnormal component.

Please logo onto our ECS website: http://www.ecs.com.tw/ECSWebSite/Support/Technical_Support_List.aspx?MenuID=50&LanID=0 for more information.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.

2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.

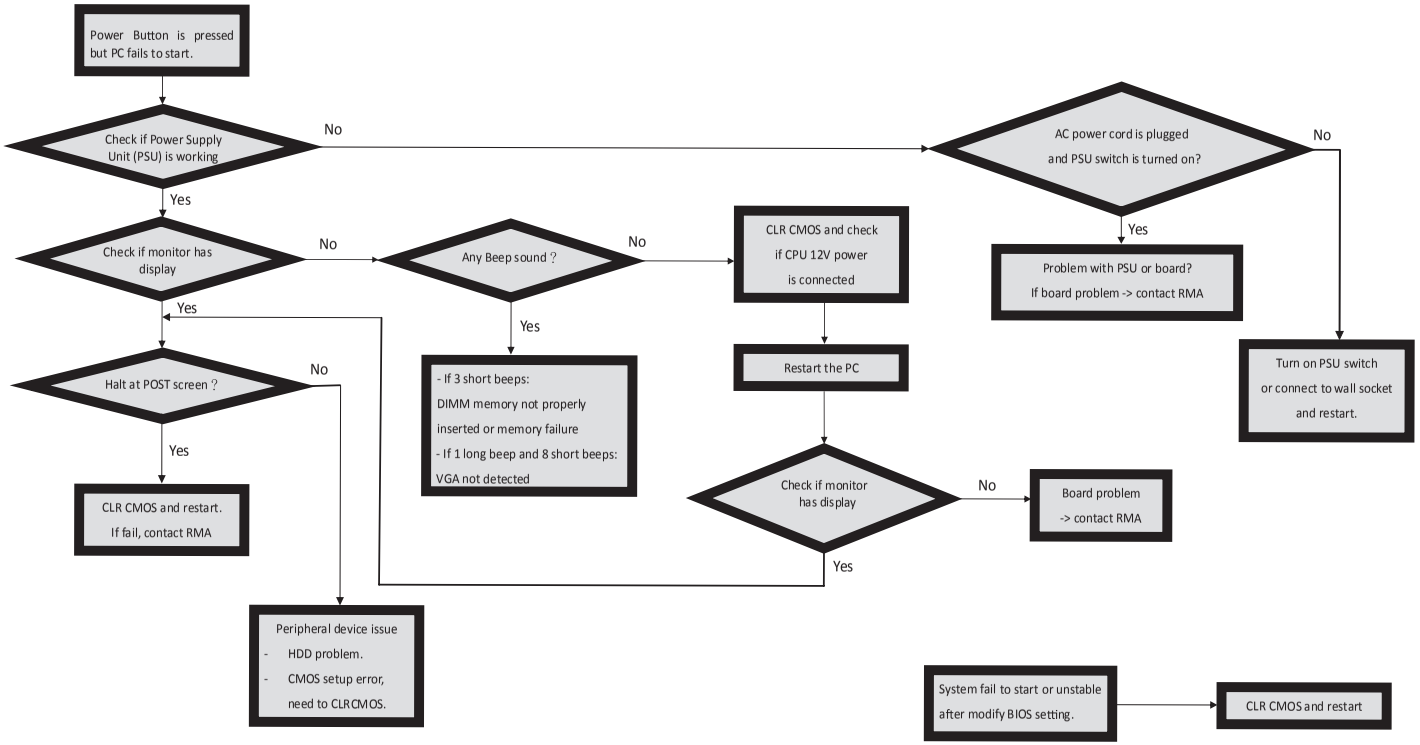
3. Routinely clean the CPU cooler fan to remove dust and hair.

4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.

5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.

6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
Yes
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Check if monitor has display
No
Yes
Any Beep sound ?
No
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
CLR CMOS and check if CPU 12V power is connected
Restart the PC
Check if monitor has display
No
Yes
Board problem -> contact RMA
Halt at POST screen ?
No
Yes
CLR CMOS and restart. If fail, contact RMA
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo